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OF THE

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STATE BOARD OF HEALTH

OF

MASSACHUSETTS.

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Approved by
The State Board of Publication.

RETURNS OF DISEASES.

Cases of Diseases declared by the State Board of Health to be Dangerous to the Public Health.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending—				
	Jan. 4.	Jan. 11.	Jan. 18.	Jan. 25.	Total.
Diphtheria,	135	137	115	168	555
Measles,	708	622	692	779	2,801
Scarlet fever,	202	192	228	211	833
Typhoid fever,	32	41	51	22	146
Tuberculosis, pulmonary (or not classified),	135	143	127	160	565
Tuberculosis, other than pulmonary,	9	12	7	13	41
Cerebro-spinal meningitis,	3	4	3	3	13
Whooping cough,	51	67	84	92	294
Varicella,	78	128	99	126	431
Ophthalmia neonatorum,	45	39	43	45	172
Anterior poliomyelitis,	1	2	1	–	4
Smallpox,	2	4	1	1	7
Trachoma,	1	–	1	1	3
Malignant pustule,	–	–	1	–	1

Cases of Infectious Diseases not included in the Above Table.

[Cases not notifiable under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending —				
	Jan. 4.	Jan. 11.	Jan. 18.	Jan. 25.	Total.
Mumps,	19	15	12	22	68
Malaria,	–	–	1	–	1
Erysipelas,	–	2	–	–	2
Syphilis,	–	–	–	1	1

RETURNS OF DEATHS.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health.

[Weekly voluntary returns of deaths from cities and towns of more than 10,000 population.]

Week ending Jan. 4, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported (All Causes).	Deaths under Five Years (All Causes).	Deaths from Diseases Dangerous to the Public Health.								
				Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston, ...	686,092	261	55	106	21	9	1	–	2	7	1	1
Worcester, ...	145,986	52	12	26	4	2	3	–	–	–	–	1
Fall River, ...	119,295	42	16	21	4	1	–	–	2	–	–	–
Lowell, ...	106,294	32	6	9	2	–	–	–	–	–	–	–
Cambridge, . . .	104,839	24	8	13	1	–	1	–	–	–	–	–
New Bedford, . . .	96,652	32	10	11	2	1	1	–	–	–	–	–
Lynn, ...	89,336	32	9	11	2	–	–	–	–	–	–	–
Springfield, . . .	88,926	25	4	11	1	–	1	–	–	–	–	–
Lawrence, ...	85,892	–	–	–	–	–	–	–	–	–	–	–
Somerville, . . .	77,236	24	7	7	3	–	1	–	–	–	–	–
Holyoke, ...	57,730	26	10	12	4	–	–	–	–	2	–	–
Brockton, ...	56,878	10	1	4	2	–	–	–	–	–	–	–
Malden, ...	44,404	14	3	4	–	1	–	–	–	–	–	–
Haverhill, ...	44,115	22	6	8	2	–	1	–	–	–	–	–
Salem, ...	43,697	12	5	1	–	–	–	–	–	–	–	–
Newton, ...	39,806	20	4	6	–	–	–	–	–	–	–	–
Fitchburg, . . .	37,826	–	–	3	–	–	1	–	–	–	–	–
Taunton, ...	34,259	13	1	5	2	1	–	–	–	–	–	–
Everett, ...	33,484	8	1	4	1	–	–	–	–	–	–	–
Quincy, ...	32,642	–	–	–	–	–	–	–	–	–	–	–
Chelsea, ...	32,452	18	3	4	1	–	–	–	–	–	–	–
Pittsfield, ...	32,121	11	3	1	1	–	–	–	–	–	–	–
Waltham, ...	27,834	4	–	–	–	–	–	–	–	–	–	–
Brookline, ...	27,792	6	–	2	1	–	–	–	–	–	–	–
Chicopee, ...	25,401	10	4	1	–	–	–	–	–	–	–	–
Gloucester, . . .	24,398	7	1	3	1	1	–	–	–	–	–	–
Medford, ...	23,150	5	–	2	–	–	–	–	–	–	–	–
North Adams, . . .	22,019	6	–	2	–	–	1	–	–	–	–	–
Northampton, . . .	19,431	6	–	1	–	1	–	–	–	–	–	–
Beverly, ...	18,650	6	–	2	–	1	–	–	–	–	–	–
Revere, ...	18,219	5	1	–	–	–	–	–	–	–	–	–
Leominster, . . .	17,580	–	–	2	1	–	–	–	–	–	–	–
Attleborough, . . .	16,215	9	2	2	–	–	–	–	–	–	–	–
Westfield, ...	16,044	11	2	7	4	–	–	–	–	–	–	–
Peabody, ...	15,721	–	–	–	–	–	–	–	–	–	–	–
Melrose, ...	15,715	3	2	1	–	–	–	–	–	–	–	–
Woburn, ...	15,308	10	2	2	1	–	–	–	–	–	–	–
Newburyport, . . .	14,949	5	–	–	–	–	–	–	–	–	–	–
Gardner, ...	14,699	3	–	–	–	–	–	–	–	–	–	–
Marlborough, . . .	14,579	6	2	1	–	–	–	–	–	–	–	1
Clinton, ...	13,075	2	–	–	–	–	–	–	–	–	–	–
Milford, ...	13,055	–	–	–	–	–	–	–	–	–	–	–
Adams, ...	13,026	2	1	1	–	–	–	–	–	–	–	–
Framingham, . . .	12,948	1	1	1	–	–	–	–	–	–	–	–
Weymouth, . . .	12,895	–	–	–	–	–	–	–	–	–	–	–
Watertown, . . .	12,875	2	–	–	–	–	–	–	–	–	–	–
Southbridge, . . .	12,592	1	–	1	1	–	–	–	–	–	–	–
Plymouth, . . .	12,141	2	–	–	–	–	–	–	–	–	–	–
Webster, ...	11,509	8	–	3	1	–	–	–	–	–	–	–
Methuen, ...	11,448	–	–	–	–	–	–	–	–	–	–	–
Wakefield, ...	11,404	–	–	–	–	–	–	–	–	–	–	–
Arlington, ...	11,187	–	–	–	–	–	–	–	–	–	–	–
Greenfield, . . .	10,427	7	2	3	–	–	–	–	–	1	–	–
Winthrop, ...	10,132	7	–	4	–	–	–	1	–	–	–	–
Total of reporting towns,	2,412,136	812	184	308	63	18	11	1	4	10	1	3

Week ending Jan. 11, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported (All Causes).	Deaths under Five Years (All Causes).	Deaths from Diseases Dangerous to the Public Health.								
				Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	WhoopingCough.	Cerebro-spinal Meningitis.
Boston, ...	686,092	278	71	109	29	4	2	–	5	5	4	1
Worcester, ...	145,986	51	12	17	5	1	1	–	–	–	–	1
Fall River, . . .	119,295	47	26	23	4	–	1	–	–	–	–	–
Lowell, ...	106,294	32	7	13	1	–	–	–	–	–	–	–
Cambridge, . . .	104,839	36	8	12	3	–	–	–	–	–	–	–
New Bedford, . . .	96,652	33	13	16	2	1	1	–	–	2	–	–
Lynn, ...	89,336	17	–	–	–	–	–	–	–	–	–	–
Springfield, . . .	88,926	31	6	9	1	–	1	–	–	–	–	–
Lawrence, ...	85,892	–	–	–	–	–	–	–	–	–	–	–
Somerville, . . .	77,236	20	3	7	4	1	–	–	–	–	–	–
Holyoke, ...	57,730	18	7	7	1	–	–	–	–	2	–	–
Brockton, ...	56,878	13	2	5	1	–	–	–	–	–	–	2
Malden, ...	44,404	15	2	4	1	–	–	–	–	–	–	1
Haverhill, ...	44,115	14	2	4	2	–	–	–	–	–	–	–
Salem, ...	43,697	16	4	6	2	–	–	–	–	–	–	–
Newton, ...	39,806	12	2	3	–	–	–	–	–	–	–	–
Fitchburg, . . .	37,826	9	4	4	1	–	–	–	–	–	–	–
Taunton, ...	34,259	14	4	6	–	–	–	–	–	–	–	–
Everett, ...	33,484	12	–	5	3	–	–	–	–	–	–	–
Quincy, ...	32,642	–	–	–	–	–	–	–	–	–	–	–
Chelsea, ...	32,452	15	4	5	1	–	–	–	–	–	–	–
Pittsfield, ...	32,121	14	4	5	1	1	1	–	–	–	–	–
Waltham, ...	27,834	12	1	1	–	–	–	–	–	–	–	–
Brookline, ...	27,792	8	1	3	–	–	–	–	–	–	–	–
Chicopee, ...	25,401	9	2	1	–	–	–	–	–	–	–	–
Gloucester, . . .	24,398	7	–	1	–	–	–	–	–	–	–	–
Medford, ...	23,150	7	1	1	–	–	–	–	–	–	–	–
North Adams, . . .	22,019	6	2	2	1	–	–	–	–	–	–	–
Northampton, . . .	19,431	9	1	2	–	–	–	–	–	–	–	–
Beverly, ...	18,650	7	–	1	–	–	–	–	–	–	–	–
Revere, ...	18,219	7	2	–	–	–	–	–	–	–	–	–
Leominster, . . .	17,580	4	2	2	–	–	–	–	–	–	–	–
Attleborough, . . .	16,215	3	–	–	–	–	–	–	–	–	–	–
Westfield, ...	16,044	6	1	–	–	–	–	–	–	–	–	–
Peabody, ...	15,721	–	–	–	–	–	–	–	–	–	–	–
Melrose, ...	15,715	3	1	–	–	–	–	–	–	–	–	–
Woburn, ...	15,308	7	2	2	–	–	–	–	–	–	–	–
Newburyport, . . .	14,949	2	1	–	–	–	–	–	–	–	–	–
Gardner, ...	14,699	5	1	4	2	–	–	–	–	–	–	–
Marlborough, . . .	14,579	6	1	1	1	–	–	–	–	–	–	–
Clinton, ...	13,075	5	1	1	–	–	–	–	–	–	–	–
Milford, ...	13,055	–	–	–	–	–	–	–	–	–	–	–
Adams, ...	13,026	5	3	–	–	–	–	–	–	–	–	–
Framingham, . . .	12,948	4	–	3	–	–	–	–	–	–	–	–
Weymouth, . . .	12,895	–	–	–	–	–	–	–	–	–	–	–
Watertown, . . .	12,875	–	–	–	–	–	–	–	–	–	–	–
Southbridge, . . .	12,592	3	3	–	–	–	–	–	–	–	–	–
Plymouth, . . .	12,141	4	1	1	–	–	–	–	–	–	–	–
Webster, ...	11,509	5	–	1	1	–	–	–	–	–	–	–
Methuen, ...	11,448	–	–	–	–	–	–	–	–	–	–	–
Wakefield, ...	11,404	3	–	1	1	–	–	–	–	–	–	–
Arlington, ...	11,187	1	–	1	1	–	–	–	–	–	–	–
Greenfield, . . .	10,427	5	2	3	–	–	–	–	–	–	2	–
Winthrop, ...	10,132	5	1	1	–	–	–	–	–	–	–	–
Total of reporting towns,	2,421,852	845	211	293	69	8	7	–	5	9	6	5

Week ending Jan. 18, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported (All Causes).	Deaths under Five Years (All Causes).	Deaths from Diseases Dangerous to the Public Health.								
				Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tubulosis, other than Pulmonary.	Diphtheria.	Tyhpoid Fever.	Scarlet Fever.	Measles.	WhoopingCough.	Cerebro-spinal Meningitis.
Boston,	686,092	230	56	81	17	5	3	–	2	–	1	1
Worcester,	145,986	53	12	19	4	–	–	–	–	–	–	1
Fall River,	119,295	38	14	20	3	2	–	1	–	–	–	–
Lowell,	106,294	37	9	16	3	1	1	–	1	–	–	–
Cambridge,	104,839	43	12	23	4	2	1	–	–	2	–	–
New Bedford,	96,652	29	9	13	4	–	4	–	–	–	–	–
Lynn,	89,336	23	4	6	1	–	1	1	–	–	–	–
Springfield,	88,926	27	8	6	1	–	–	–	–	1	–	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	21	4	5	2	–	–	–	1	–	–	–
Holyoke,	57,730	20	4	5	1	–	–	–	–	–	–	–
Brockton,	56,878	14	7	4	–	–	–	–	–	–	–	–
Malden,	44,404	10	–	–	–	–	–	–	–	–	–	–
Haverhill,	44,115	13	3	4	–	–	–	–	–	–	–	–
Salem,	43,697	12	4	5	3	1	–	–	–	–	–	–
Newton,	39,806	12	1	2	1	–	–	–	–	–	–	–
Fitchburg,	37,826	12	4	5	–	–	–	–	1	1	–	–
Taunton,	34,259	8	3	1	–	–	–	–	–	–	–	–
Everett,	33,484	6	1	–	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	8	1	2	–	–	–	1	–	–	–	–
Pittsfield,	32,121	8	–	4	1	–	–	–	–	–	–	–
Waltham,	27,834	7	2	5	2	–	1	–	–	–	–	–
Brookline,	27,792	13	–	2	–	–	–	–	–	–	–	–
Chicopee,	25,401	–	–	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	10	1	2	1	–	1	–	–	–	–	–
Medford,	23,150	2	1	1	–	1	–	–	–	–	–	–
North Adams,	22,019	6	4	1	1	–	–	–	–	–	–	–
Northampton,	19,431	5	2	1	–	–	–	–	–	–	–	–
Beverly,	18,650	6	1	1	–	–	–	–	–	–	–	–
Revere,	18,219	3	1	1	1	–	–	–	–	–	–	–
Leominster,	17,580	5	1	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	1	–	1	–	–	–	–	–	–	–	–
Westfield,	16,044	5	2	3	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	7	1	2	–	–	–	–	–	–	–	–
Woburn,	15,308	5	–	1	1	–	–	–	–	–	–	–
Newburyport,	14,949	5	1	1	1	–	–	–	–	–	–	–
Gardner,	14,699	4	1	1	–	–	–	–	–	–	–	–
Marlborough,	14,579	4	–	1	1	–	–	–	–	–	–	–
Clinton,	13,075	8	2	3	1	–	–	–	–	1	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	1	1	–	–	–	–	–	–	–	–	–
Framingham,	12,948	4	1	2	–	1	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	3	1	2	1	–	–	–	–	–	–	–
Southbridge,	12,592	1	1	1	–	–	–	–	–	–	–	–
Plymouth,	12,141	2	1	1	–	1	–	–	–	–	–	–
Webster,	11,509	2	2	1	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	1	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	6	2	1	–	1	–	–	–	–	–	–
Greenfield,	10,427	4	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	2	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,409,326	746	185	256	55	15	12	3	5	5	1	2

Week ending Jan. 25, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported (All Causes).	Deaths under Five Years (All Causes).	Deaths from Diseases Dangerous to the Public Health.								
				Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	WhoopingCough.	Cerebro-spinal Meningitis.
Boston,	686,092	277	53	93	27	1	2	4	5	1	–	–
Worcester,	145,986	64	20	23	5	2	2	–	–	–	–	–
Fall River,	119,295	35	18	22	3	1	1	–	–	–	–	–
Lowell,	106,294	39	7	17	1	–	–	–	–	–	–	–
Cambridge,	104,839	26	4	11	4	1	–	–	–	–	–	–
New Bedford,	96,652	40	19	14	1	1	4	–	–	–	–	1
Lynn,	89,336	18	4	4	2	–	–	–	–	–	–	–
Springfield,	88,926	29	4	7	–	1	–	–	–	–	–	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	19	3	6	1	–	–	–	–	–	–	–
Holyoke,	57,730	24	7	11	4	2	–	–	1	–	–	–
Brockton,	56,878	12	–	1	1	–	–	–	–	–	–	–
Malden,	44,404	10	2	5	2	–	1	–	–	–	–	–
Haverhill,	44,115	9	1	2	–	–	–	–	–	–	1	–
Salem,	43,697	8	1	–	–	–	–	–	–	–	–	–
Newton,	39,806	15	–	4	1	–	–	–	–	–	–	–
Fitchburg,	37,826	12	3	3	–	–	–	–	–	–	–	–
Taunton,	34,259	15	4	7	1	1	–	–	–	–	–	–
Everett,	33,484	7	3	1	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	19	2	4	1	–	–	1	–	–	–	–
Pittsfield,	32,121	16	2	3	1	–	–	–	1	–	–	–
Waltham,	27,834	5	–	2	–	–	1	–	–	–	–	–
Brookline,	27,792	6	–	1	–	–	–	–	–	–	–	–
Chicopee,	25,401	6	1	3	1	–	–	–	1	–	–	–
Gloucester,	24,398	7	1	5	2	–	–	–	–	–	–	–
Medford,	23,150	7	2	3	1	–	–	–	–	–	–	–
North Adams,	22,019	8	3	2	1	–	–	–	–	–	–	–
Northampton,	19,431	4	1	1	–	–	1	–	–	–	–	–
Beverly,	18,650	3	–	2	1	–	–	1	–	–	–	–
Revere,	18,219	4	1	1	–	–	–	–	–	–	–	–
Leominster,	17,580	4	2	3	–	–	–	–	–	1	–	–
Attleborough,	16,215	5	–	1	–	–	–	–	–	–	–	–
Westfield,	16,044	8	3	3	1	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	9	1	1	–	–	–	–	–	–	–	–
Woburn,	15,308	4	1	1	–	–	–	–	–	–	–	–
Newburyport,	14,949	5	1	3	–	–	–	–	–	–	–	–
Gardner,	14,699	4	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	4	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	2	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	2	1	–	–	–	–	–	–	–	–	–
Framingham,	12,948	4	–	1	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	2	1	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	2	–	1	–	–	–	–	–	–	–	–
Plymouth,	12,141	3	1	3	–	–	–	–	–	–	–	–
Webster,	11,509	3	–	1	1	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	2	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	1	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	3	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	1	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,434,727	812	177	276	63	10	12	6	8	2	1	1

Deaths from Infectious Diseases not specifically mentioned in Above Tables.

[Weekly voluntary returns of deaths from cities and towns of more than 10,000 population.]

DISEASE.	Place.	Week ending — Jan. 4.	Jan. 11.	Jan. 18.	Jan. 25.
Acute lung diseases,	Boston,	55	52	41	43
	Worcester,	15	9	14	11
	Fall River,	9	12	13	7
	Lowell,	6	9	13	10
	Cambridge,	8	8	6	11
	New Bedford,	6	10	5	5
	Lynn,	9	–	2	3
	Springfield,	8	7	5	4
	Somerville,	3	2	4	2
	Holyoke,	6	2	2	1
	Brockton,	2	2	–	–
	Malden,	3	–	2	–
	Haverhill,	5	2	1	–
	Salem,	1	3	–	3
	Newton,	6	3	3	1
	Fitchburg,	1	3	3	–
	Taunton,	2	2	3	–
	Everett,	3	2	1	–
	Chelsea,	3	4	2	1
	Pittsfield,	–	1	–	3
	Waltham,	–	1	1	2
	Brookline,	1	3	1	2
	Chicopee,	1	1	1	–
	Gloucester,	1	1	3	–
	Medford,	2	1	2	–
	North Adams,	1	1	1	–
	Northampton,	–	2	–	1
	Beverly,	1	1	–	1
	Revere,	–	–	1	–
	Leominster,	2	2	2	–
	Attleborough,	2	–	1	1
	Westfield,	2	–	2	2
	Melrose,	1	–	1	2
	Woburn,	1	2	1	–
	Newburyport,	–	–	3	–
	Gardner,	–	1	–	1
	Clinton,	–	1	–	1
	Adams,	1	–	–	–
	Framingham,	–	3	1	1
	Watertown,	–	–	–	1
	Southbridge,	–	–	1	1
	Plymouth,	–	1	3	–
	Webster,	2	–	–	–
	Greenfield,	2	1	–	–
	Winthrop,	3	1	–	–
Diarrhœal diseases,	Boston,	8	4	8	6
	Worcester,	–	–	–	1
	Fall River,	5	6	3	5
	Lowell,	1	3	2	–
	Cambridge,	1	–	–	3
	New Bedford,	1	–	2	–
	Somerville,	–	–	1	–
	Holyoke,	–	2	1	–

Deaths from Infectious Diseases not specifically mentioned in Above Tables — *Concluded.*

DISEASE.	Place.	Week ending — Jan. 4.	Jan. 11.	Jan. 18.	Jan. 25.
Diarrhœal diseases — *Con.*	Salem,	–	1	–	–
	Taunton,	–	3	1	–
	Pittsfield,	–	1	1	–
	Westfield,	–	–	–	1
	Framingham,	1	–	–	–
Erysipelas,	Boston,	1	–	1	1
	Worcester,	1	–	–	2
	Fall River,	–	–	1	–
	Malden,	–	1	–	–
Influenza,	Boston,	–	1	2	2
	Lowell,	–	–	1	–
	Cambridge,	2	1	–	–
	Springfield,	–	–	1	–
	Holyoke,	–	–	1	–
	Malden,	–	1	–	–
	Fitchburg,	1	–	–	1
	Taunton,	–	1	1	1
	Gardner,	–	1	–	–
Puerperal fever,	Boston,	–	2	1	–
	Fall River,	–	–	–	2
	Springfield,	1	–	–	–
Meningitis, other than cerebro-spinal,	Westfield,	1	–	–	–
	Webster,	–	–	–	1

REPORT ON INSPECTION OF FOOD AND DRUGS.

Laboratory Examinations of Food and Drugs.

The following summary presents the results of the laboratory examinations during the month of January, 1913, of samples of food and drugs collected by inspectors of the Board: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Buckwheat flour,	1	–	1	Jams and jellies,	3	1	4
Butter, . .	2	1	3	Lard, . .	5	1	6
Cider, . .	–	5	5	Maple syrup, .	1	–	1
Cocoa, . .	4	–	4	Meat products: —			
Coffee, . .	3	2	5	Hamburg steak, .	1	1	2
Cordials, . .	4	–	4	Sausages, .	7	8	15
Cream, . .	10	–	10	Milk, . .	276	120	396
Drugs, . .	52	11	63	Olive oil, . .	4	2	6
Eggs, . .	16	9	25	Peanut butter, .	5	–	5
Flavoring extracts: —				Syrup, . .	1	–	1
Lemon, .	2	2	4	Table sauce, .	1	–	1
Peppermint, .	1	–	1				
Vanilla, .	4	–	4				
Wintergreen,	1	–	1	Total, .	404	163	567

The samples of drugs found to be adulterated were alcohol, spirit of nitrous ether, spirit of camphor, spirit of peppermint, tincture of iodine.

The cities and towns in which samples were collected were: Amesbury, Athol, Attleborough, Boston, Cambridge, Canton, Chicopee, Clinton, Concord, Dudley, Everett, Fall River, Fitchburg, Gloucester, Greenfield, Lawrence, Lynn, Methuen, Montague, Natick, Newburyport, North Andover, Orange, Salem, Sherborn, Springfield, Sterling, Stoughton, Webster, Wilmington, Woburn.

Prosecutions for Violations of the Law relating to Food and Drugs.

Fourteen convictions were secured during the month of January, 1913, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Frank Moore, . . .	Orange, . .	Milk (total solids, 11.74; watered).
2	John Basher, . . .	Concord, .	Milk (total solids, 10.50; watered).
3	Charles W. Wetherbee, .	Stow, . .	Milk (total solids, 11.54; watered).
4	Arthur W. Lord, . .	Maynard, .	Milk (total solids, 12.00; skimmed).
5	Manuel Perry, . .	Westport, .	Milk (total solids, 11.46; watered).
6	United Fisheries Company,	Gloucester, .	Milk (total solids, 11.40; skimmed).
7	Luther W. Rugg, . .	Sterling, . .	Milk (total solids, 9.68; watered).
8	John Aquila, . . .	Boston, . .	Cider (benzoic acid).
9	Agajohn Tekmejian, .	Boston, . .	Cider (benzoic acid).
10	John Rendozzo, . .	Boston, . .	Cider (benzoic acid).
11	John J. Fay, . . .	Boston, . .	Cider (benzoic acid).
12	Henry Siegel Company, .	Boston, . .	Canned herring (decomposed).[1]
13	Houghton & Dutton Company.	Boston, . .	Canned sardines (decomposed).[1]
14	John A. Goodrich, . .	Boston, . .	Cracked eggs (decomposed).

[1] Appealed.

Fines imposed, $475.

The following cases were placed on file: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Hawthorne Pharmacy, .	Salem, . .	Sweet spirit of nitre (not U. S. P.).
2	Joseph R. Goddu, . .	Salem, . .	Sweet spirit of nitre (not U. S. P.).
3	Jesse F. Upton, . .	Salem, . .	Sweet spirit of nitre (not U. S. P.).

List of Adulterated or Improperly Labeled Foods.

The following shows the adulterated or improperly labeled foods, during the month of January, 1913: —

Number of Samples.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
9931-R	Coleman's Pure Extract of lemon.	Coleman Specialty Company, Boston, Mass.,	No lemon oil present.
18829	Milk,	John Basher, Lexington, Mass., Manuel Basher, Lexington, Mass.,	Total solids, 10.36 per cent.; fat, 3.10 per cent.; contained added water.
18830			Total solids, 10.48 per cent.; fat, 3.10 per cent.; contained added water.
18831			Total solids, 10.30 per cent.; fat, 3.00 per cent.; contained added water.
18832			Total solids, 10.56 per cent.; fat, 3.10 per cent.; contained added water.
18833			Total solids, 10.70 per cent.; fat, 3.30 per cent.; contained added water.
18834			Total solids, 10.60 per cent.; fat, 3.20 per cent.; contained added water.
18835			Total solids, 10.54 per cent.; fat, 3.20 per cent.; contained added water.
18836			Total solids, 10.30 per cent.; fat, 3.00 per cent.; contained added water.
18837			Total solids, 10.50 per cent.; fat, 3.20 per cent.; contained added water.
18840			Total solids, 10.94 per cent.; fat, 3.10 per cent.; contained added water.
18841			Total solids, 10.94 per cent.; fat, 3.10 per cent.; contained added water.
18842			Total solids, 11.60 per cent.; fat, 4.00 per cent.; contained added water.
18843			Total solids, 10.42 per cent.; fat, 3.05 per cent.; contained added water.
18844			Total solids, 10.80 per cent.; fat, 3.10 per cent.; contained added water.

18845			Total solids, 10.42 per cent.; fat, 3.00 per cent.; contained added water.
18846			Total solids, 10.50 per cent.; fat, 3.20 per cent.; contained added water.
18847			Total solids, 10.60 per cent.; fat, 3.00 per cent.; contained added water.
18848			Total solids, 10.30 per cent.; fat, 3.00 per cent.; contained added water.
q 10328	Milk, ...	C. M. McKechnie, Natick, Mass., . . .	Total solids, 11.00 per cent.; fat, 3.40 per cent.; contained added water.
1967–S			Total solids, 8.50 per cent.; fat, 2.80 per cent.; contained added water.
1969–S			Total solids, 9.06 per cent.; fat, 2.80 per cent.; contained added water.
1971–S	Milk, . . .	Walter D. Carter, Wilmington, Mass., . .	Total solids, 11.40 per cent.; fat, 3.70 per cent.; contained added water.
1973–S			Total solids, 7.46 per cent.; fat, 2.40 per cent.; contained added water.
1975–S			Total solids, 10.00 per cent.; fat, 3.60 per cent.; contained added water.
1991–S	Milk, ...	Charles Holmes, Wilmington, Mass., . . .	Total solids, 8.36 per cent.; fat, 2.60 per cent.; contained added water.
1985–S			Total solids, 11.70 per cent.; fat, 3.90 per cent.; contained added water.
1989–S	Milk, . . .	Walter D. Carter, Wilmington, Mass., . .	Total solids, 12.05 per cent.; fat, 4.10 per cent.; contained added water.
2055–S	Milk, ...	Charles Holmes, Wilmington, Mass., . . .	Total solids, 9.56 per cent.; fat, 2.75 per cent.; contained added water.
18930			Total solids, 11.87 per cent.; fat, 2.70 per cent.; proteins, 3.60 per cent.; skimmed milk.
18931	Milk, . . .	John N. Robertson, Stoughton, Mass., . .	Total solids, 11.73 per cent.; fat, 2.50 per cent.; proteins, 3.63 per cent.; skimmed milk.
18932			Total solids, 11.73 per cent.; fat, 2.50 per cent.; proteins, 3.60 per cent.; skimmed milk.
q 10327	Milk, . . .	William A. Sweatt, Natick, Mass., . . Fred W. Sweatt, Natick, Mass., . . .	Total solids, 11.20 per cent.; fat, 2.20 per cent.; proteins, 3.34 per cent.; skimmed milk.

List of Adulterated or Improperly Labeled Foods — *Concluded.*

Number of Samples.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
B 19109	Milk,	Avidis B. Dagdigin, Methuen, Mass.,	Total solids, 11.30 per cent.; fat, 3.30 per cent.; contained added water.
B 19110			Total solids, 11.66 per cent.; fat, 3.60 per cent.; contained added water.
B 19111			Total solids, 11.18 per cent.; fat, 3.45 per cent.; contained added water.
B 19112			Total solids, 11.70 per cent.; fat, 3.70 per cent.; contained added water.
B 19113			Total solids, 11.62 per cent.; fat, 3.80 per cent.; contained added water.
B 19114			Total solids, 11.78 per cent.; fat, 3.85 per cent.; contained added water.
B 19115			Total solids, 11.26 per cent.; fat, 3.20 per cent.; contained added water.
B 19116			Total solids, 10.92 per cent.; fat, 3.00 per cent.; contained added water.
B 19117			Total solids, 11.00 per cent.; fat, 3.05 per cent.; contained added water.
B 19118			Total solids, 11.82 per cent.; fat, 3.90 per cent.; contained added water.
19003	Milk,	Eugene Sullivan, Lawrence, Mass.,	Total solids, 9.66 per cent.; fat, 2.60 per cent.; contained added water.
19004			Total solids, 10.94 per cent.; fat, 3.35 per cent.; contained added water.

QUARTERLY REPORT ON COLD STORAGE.

During the months of October, November and December, 1912, the licensed cold-storage or refrigerating warehouses in the State were examined by inspectors of the State Board of Health and were reported to be in fair to excellent sanitary condition. At some of these warehouses it became necessary to condemn certain articles as unfit for food on account of being decomposed, and were disposed of as per summary below.

The quarterly report from Oct. 1 to Dec. 31, 1912, has been rendered by the licensed cold-storage or refrigerating warehouses, showing the quantities of articles of food placed in cold storage during the three months preceding the first day of January, 1913, also, the quantities of butter and eggs held on the first day of January, 1913, as follows: —

Articles placed in Cold Storage.

Articles.	Cases.	Dozens.	Packages.	Pounds.
Eggs, case, ...	20,185	605,550	–	–
Eggs, broken, . . .	–	–	216	272,090
Butter, ...	25	–	45,718	4,430,688
Poultry, ...	4	4	24,937	6,169,790
Game, [1]	–	$134\frac{5}{6}$	1,282	38,699
Meat, fresh, ...	4,079	–	16,623	5,930,762
Meat products, fresh (except in process of manufacture), .	4,224	–	2	441,058
Fish, fresh food, . . .	–	–	2,860	5,211,943
Totals, ...	28,517	$605,688\frac{5}{6}$	91,638	22,495,030

[1] In addition, 27 coons were also reported.

Butter and Eggs held.

Articles.	Cases.	Dozens.	Packages.	Pounds.
Eggs, case, ...	197,914	5,937,420	–	–
Eggs, broken, . . .	–	–	100	6,650
Butter, ...	–	–	187,242	10,733,856
Totals, ...	197,914	5,937,420	187,342	10,740,506

Articles in Cold Storage condemned upon Physical Examination alone as Unfit for Food.

Date.	Articles.	Disposition.
Dec. 6, 1912, ...	2 boxes poultry, ...	Buried.
Dec. 6, 1912, ...	1 box pork loins, ...	Buried.
Dec. 20, 1912, ...	119¼ pounds mackerel, . .	Rendered.
Dec. 26, 1912, ...	58 pounds broilers, . . .	Rendered.

QUARTERLY REPORT ON THE BUSINESS OF SLAUGHTERING AND MEAT INSPECTION.

The quarterly report from Oct. 1 to Dec. 31, 1912, inclusive, of the inspectors of slaughtering in the various cities and towns throughout the Commonwealth, has been received. Below will be found tables showing the number and kind of carcasses inspected; also, the condemnations, reasons for condemnation and the disposition of such carcasses for each city and town from which a report has been rendered. Where blank spaces appear it indicates the absence of a report having been rendered by the inspector of slaughtering for such place.

Quarterly Report on Slaughtering Inspection, Oct. 1–Dec. 31, 1912.

Cities and Towns.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Abington,	4	14	262	–	1 cow, 1 hog.	2 tuberculosis.	2 rendered.
Acton,	1,138	201	43	–	44 cattle, 8 calves.	38 tuberculosis, 1 cirrhosis, 1 septicæmia, 2 tumors, 1 bruised, 1 natural death, 8 immature.	51 rendered, 1 fed to hogs.
Acushnet,	15	73	230	–	3 cattle.	3 tuberculosis.	3 rendered.
Adams,	–	–	–	–	– –	– –	– –
Agawam,	270	375	322	20	2 cattle, 1 calf, 2 hogs.	4 tuberculosis, 1 immature.	4 rendered, 1 fed to hogs.
Alford,	9	–	22	13	– –	– –	– –
Amesbury,	–	–	–	–	– –	– –	– –
Amherst,	185	217	223	50	1 cow, 7 calves, 1 hog.	1 tuberculosis, 7 immature, 1 nephritis.	9 rendered.
Andover,	–	3	149	–	6 hogs.	3 tuberculosis, 2 paralysis, 1 pleuropneumonia.	6 rendered.
Arlington,[1]	–	–	–	–	– –	– –	– –
Ashburnham,	10	14	65	2	– –	– –	– –

[1] Reports received too late to classify.

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, OCT. 1–DEC. 31, 1912 — *Continued.*

Cities and Towns.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Ashby,	–	–	–	–	– –	– –	– –
Ashfield,	26	2	106	–	– –	– –	– –
Ashland,	9	4	204	–	3 cattle, 9 hogs.	10 tuberculosis, 2 hog cholera.	12 rendered.
Athol,	45	19	202	23	6 cattle.	6 tuberculosis.	6 rendered.
Attleborough,	61	18	125	–	1 cow, 3 hogs.	4 tuberculosis.	2 rendered, 2 buried.
Auburn,	–	–	–	–	– –	– –	– –
Avon,	–	–	–	–	– –	– –	– –
Ayer,	–	–	–	–	– –	– –	– –
Barnstable,	16	12	220	2	– –	– –	– –
Barre,	–	–	–	–	– –	– –	– –
Becket,	5	–	11	11	– –	– –	– –
Bedford,	–	–	–	–	– –	– –	– –
Belchertown,	22	132	170	–	2 calves.	2 immature.	2 buried.
Bellingham,	–	–	12	–	– –	– –	– –
Belmont,	–	–	197	–	– –	– –	– –
Berkley,	–	–	46	–	– –	– –	– –
Berlin,	1	–	46	–	– –	– –	– –
Bernardston,	–	–	–	–	– –	– –	– –
Beverly,	–	–	–	–	– –	– –	– –
Billerica,	–	–	–	–	– –	– –	– –
Blackstone,	–	–	–	–	– –	– –	– –
Blandford,	31	22	112	2	– –	– –	– –
Bolton,	–	–	–	–	– –	– –	– –
Bourne,	3	–	158	–	4 hogs.	4 hog cholera.	4 buried.
Boxborough,	–	–	–	–	– –	– –	– –
Boxford,	51	1	281	–	1 hog.	1 tuberculosis.	1 rendered.
Boylston,	21	35	94	–	1 cow.	1 tuberculosis.	1 buried.
Braintree,	11	44	152	7	2 cattle.	2 tuberculosis.	2 rendered.
Brewster,	–	–	–	–	– –	– –	– –
Bridgewater,	–	–	–	–	– –	– –	– –
Brimfield,	–	–	–	–	– –	– –	– –
Brockton,	7	–	102	–	1 cow, 1 hog.	1 tuberculosis, 1 septicæmia.	2 rendered.

Brookfield,	4	18	166	2	1 calf, 3 hogs.	1 immature, 2 tuberculosis, 1 trachina.	1 fed to hens, 3 buried.
Brookline,	–	–	–	–	– –	– –	– –
Buckland,	–	–	–	–	– –	– –	– –
Burlington,	–	–	–	–	– –	– –	– –
Cambridge,	–	5,578	46	–	62 calves.	25 immature, 8 weak condition, 14 bruised, 15 dead on arrival.	62 rendered.
Canton,	–	–	123	–	– –	– –	– –
Carlisle,	–	–	–	–	– –	– –	– –
Carver,	2	50	14	–	– –	– –	– –
Charlemont,	20	2	53	10	– –	– –	– –
Charlton,	202	171	162	5	1 cow, 2 calves, 1 hog.	4 tuberculosis.	4 buried.
Chatham,	4	–	78	–	– –	– –	– –
Chelmsford,	903	363	467	12	31 cattle, 16 calves, 8 hogs, 1 sheep.	34 tuberculosis, 16 immature, 3 hog cholera, 2 unfit for food, 1 natural death.	56 rendered.
Chelsea,	–	–	–	–	– –	– –	– –
Cheshire,	13	–	10	–	– –	– –	– –
Chester,	–	3	5	26	– –	– –	– –
Chesterfield,	9	20	115	–	3 hogs.	3 tuberculosis.	3 rendered.
Chicopee,	3	5	182	–	– –	– –	– –
Chilmark,	–	–	–	–	– –	– –	– –
Clarksburg,	–	–	–	–	– –	– –	– –
Clinton,	14	82	51	–	1 cow, 2 calves, 3 hogs.	2 tuberculosis, 2 immature, 2 hog cholera.	6 rendered.
Cohasset,	1	–	95	–	2 hogs.	2 tuberculosis.	2 buried.
Colrain,	38	1	129	–	1 cow.	1 tuberculosis.	1 rendered.
Concord,	–	–	7	–	– –	– –	– –
Conway,	–	–	–	–	– –	– –	– –
Cummington,	9	5	46	16	– –	– –	– –
Dalton, [1]	–	–	–	–	– –	– –	– –
Dana,	8	–	38	3	– –	– –	– –
Danvers,	–	112	42	7	4 calves.	4 immature.	4 fed to hogs.
Dartmouth,	80	52	209	–	3 cattle.	1 tuberculosis, 1 septicæmia, 1 large abscess.	3 rendered.
Dedham,	17	342	286	–	1 cow, 4 calves, 4 hogs.	2 tuberculosis, 4 immature, 3 hog cholera.	9 rendered.

[1] Reports received too late to classify.

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, OCT. 1–DEC. 31, 1912 — *Continued.*

Cities and Towns.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Deerfield,	18	30	99	2	1 cow.	1 tuberculosis.	1 rendered.
Dennis,	6	–	70	–	–	–	–
Dighton,	7	45	49	–	–	–	–
Douglas,	7	27	36	–	–	–	–
Dover,	–	–	–	–	–	–	–
Dracut,	156	77	351	–	6 cattle, 3 calves, 5 hogs.	9 tuberculosis, 3 immature, 1 hog cholera, 1 icterus.	12 rendered, 2 buried.
Dudley,	43	49	116	–	1 cow.	1 tuberculosis.	1 buried.
Dunstable,	–	2	30	13	–	–	–
Duxbury,	–	–	116	–	–	–	–
East Bridgewater,	4	62	124	–	–	–	–
East Longmeadow,	4	–	63	–	–	–	–
Eastham,	5	8	68	–	–	–	–
Easthampton,	32	141	59	–	2 hogs.	2 tuberculosis.	2 buried.
Easton,	29	45	150	–	1 cow, 2 calves, 2 hogs.	1 milk fever, 2 peritonitis, 1 tuberculosis, 1 contusions.	5 rendered.
Edgartown,	6	13	226	21	–	–	–
Egremont,	40	23	75	50	–	–	–
Enfield,	3	46	66	–	–	–	–
Erving,	7	3	21	–	1 calf.	1 tuberculosis.	1 buried.
Essex,	–	6	20	–	–	–	–
Everett,	–	–	–	–	–	–	–
Fairhaven,	316	242	75	44	3 cattle, 4 calves, 2 hogs, 3 sheep.	4 tuberculosis, 4 immature, 1 pneumonia, 3 caseous lymphadenitis.	12 rendered.
Fall River,	–	–	5	–	–	–	–
Falmouth,	1	3	121	–	–	–	–
Fitchburg,	231	180	140	–	1 cow, 1 calf.	1 tuberculosis, 1 immature.	2 rendered.
Florida,	–	–	–	–	–	–	–

Foxborough,	1	4	65	–	–	–	–
Framingham,	–	–	–	–	–	–	–
Franklin,	1	15	163	–	1 hog.	1 uremia.	1 buried.
Freetown,	–	–	15	–	–	–	–
Gardner,	–	–	–	–	–	–	–
Gay Head,	–	–	–	–	–	–	–
Georgetown,	–	–	–	–	–	–	–
Gill,	31	29	54	4	–	–	–
Gloucester,	5	33	101	–	5 calves.	5 immature.	5 rendered.
Goshen,	–	–	–	–	–	–	–
Gosnold,	–	–	–	–	–	–	–
Grafton,	–	–	–	–	–	–	–
Granby,	59	64	73	–	3 cattle, 5 calves, 1 hog.	2 tuberculosis, 1 bruised, 5 immature, 1 hog cholera.	2 buried, 5 fed to hens and hogs, 2 rendered.
Granville,	–	–	–	–	–	–	–
Great Barrington,	–	–	–	–	–	–	–
Greenfield,	35	81	91	237	1 cow, 1 hog, 1 sheep.	1 tuberculosis, 1 hog cholera, 1 anemia.	3 rendered.
Greenwich,	–	–	–	–	–	–	–
Groton,	–	–	–	–	–	–	–
Groveland,	–	1	33	2	–	–	–
Hadley,	3	1	50	–	–	–	–
Halifax,	–	–	–	–	–	–	–
Hamilton,	–	–	–	–	–	–	–
Hampden,	3	58	52	–	–	–	–
Hancock,	–	–	–	–	–	–	–
Hanover,	–	–	48	3	–	–	–
Hanson,	–	4	64	–	1 hog.	1 decomposed.	1 buried.
Hardwick,	2	1	23	–	–	–	–
Harvard,	7	183	56	1	9 calves, 1 hog.	9 immature, 1 tuberculosis.	8 fed to hens, 1 buried, 1 rendered.
Harwich,	–	–	–	–	–	–	–
Hatfield,	11	28	98	–	1 cow.	1 tuberculosis.	1 rendered.
Haverhill,	–	–	–	–	–	–	–
Hawley,	14	2	32	1	–	–	–
Heath,	10	–	48	–	–	–	–
Hingham,	–	1	110	–	3 hogs.	3 tuberculosis.	3 rendered.

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, OCT. 1–DEC. 31, 1912 — *Continued.*

CITIES AND TOWNS.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Hinsdale,	–	–	–	–	–	–	–
Holbrook,	–	–	–	–	–	–	–
Holden,	35	68	70	–	–	–	–
Holland,	3	4	4	–	–	–	–
Holliston,	–	–	–	–	–	–	–
Holyoke,	25	19	88	–	4 cattle, 1 hog.	5 tuberculosis.	5 rendered.
Hopedale,	–	–	–	–	–	–	–
Hopkinton,	–	–	36	–	–	–	–
Hubbardston,	–	–	–	–	–	–	–
Hudson,	–	13	75	–	–	–	–
Hull,	–	–	9	–	–	–	–
Huntington,	5	2	38	3	–	–	–
Ipswich,	–	–	–	–	–	–	–
Kingston,	–	6	33	–	–	–	–
Lakeville,	–	–	50	–	–	–	–
Lancaster,	2	–	54	–	–	–	–
Lanesborough,	–	–	–	–	–	–	–
Lawrence,	–	–	–	–	–	–	–
Lee,	43	–	68	–	1 cow.	1 tuberculosis.	1 buried.
Leicester,	10	52	51	1	–	–	–
Lenox,	–	–	–	–	–	–	–
Leominster,	46	127	165	–	4 cattle, 4 calves, 7 hogs.	11 tuberculosis, 4 immature.	15 rendered.
Leverett,	–	–	–	–	–	–	–
Lexington,	9	1,198	843	–	55 calves.	55 immature.	55 rendered.
Leyden,	–	–	–	–	–	–	–
Lincoln,	–	–	–	–	–	–	–
Littleton,	–	–	–	–	–	–	–
Longmeadow,	–	–	–	–	–	–	–
Lowell,	1	–	86	–	–	–	–
Ludlow,	5	131	63	–	1 calf.	1 immature.	1 consumed by owner.

Lunenburg,	96	175	222	7	2 cattle.	2 tuberculosis.	2 rendered.
Lynn,	–	–	–	–	– –	– –	– –
Lynnfield,	342	214	–	–	6 cattle, 11 calves.	6 tuberculosis, 11 immature.	17 rendered.
Malden,	–	–	–	–	– –	– –	– –
Manchester,	–	–	–	–	– –	– –	– –
Mansfield,	6	12	263	–	1 cow, 1 hog.	1 broken hip, 1 nephritis.	2 rendered.
Marblehead,	2	–	54	–	– –	– –	– –
Marion,	2	–	150	–	– –	– –	– –
Marlborough,	7	30	243	1	1 calf, 1 hog.	1 immature, 1 emaciated.	2 rendered.
Marshfield,	–	–	–	–	– –	– –	– –
Mashpee,	–	–	–	–	– –	– –	– –
Mattapoisett,	1	–	156	–	1 hog.	1 abscess.	1 rendered.
Maynard,	16	121	142	3	9 hogs.	9 hog cholera.	9 buried.
Medfield,	–	–	44	–	– –	– –	– –
Medford,	–	–	–	–	– –	– –	– –
Medway,	86	183	61	–	1 calf.	1 immature.	1 rendered.
Melrose,	–	–	–	–	– –	– –	– –
Mendon,	–	–	–	–	– –	– –	– –
Merrimac,	1	7	64	–	– –	– –	– –
Methuen,	260	138	157	–	5 cattle, 4 calves.	5 tuberculosis, 4 immature.	9 rendered.
Middleborough,	–	–	–	–	– –	– –	– –
Middlefield,	–	–	–	–	– –	– –	– –
Middleton,	–	–	38	–	– –	– –	– –
Milford,	125	171	94	9	3 cattle, 3 calves.	3 tuberculosis, 3 immature.	3 rendered, 3 buried.
Millbury,	–	–	–	–	– –	– –	– –
Millis,	–	–	–	–	– –	– –	– –
Milton,	–	–	31	11	– –	– –	– –
Monroe,	–	–	–	–	– –	– –	– –
Monson,	–	–	–	–	– –	– –	– –
Montague,	55	44	65	10	– –	– –	– –
Monterey,	–	–	–	–	– –	– –	– –
Montgomery,	–	–	–	–	– –	– –	– –
Mount Washington,	–	–	–	–	– –	– –	– –
Nahant,	–	–	–	–	– –	– –	– –
Nantucket,	–	–	–	–	– –	– –	– –
Natick,	–	–	–	–	– –	– –	– –
Needham,	–	–	–	–	– –	– –	– –

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, OCT. 1–DEC. 31, 1912 — *Continued.*

Cities and Towns.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
New Ashford,	–	–	–	–	–	–	–
New Bedford,	23	176	350	–	2 cattle, 6 calves, 2 hogs.	4 tuberculosis, 6 immature.	10 rendered.
New Braintree,	–	–	–	–	–	–	–
New Marlborough,	–	–	–	–	–	–	–
New Salem,	1	11	55	–	–	–	–
Newbury,	–	–	–	–	–	–	–
Newburyport,	155	104	99	1	1 cow, 2 calves, 1 hog.	2 tuberculosis, 2 immature.	4 rendered.
Newton,	–	–	–	–	–	–	–
Norfolk,	–	–	–	–	–	–	–
North Adams,	134	60	26	26	1 cow, 1 hog.	1 tuberculosis, 1 peritonitis.	2 rendered.
North Andover,	–	–	–	–	–	–	–
North Attleborough,	25	27	91	–	1 hog.	1 tuberculosis.	1 buried.
North Brookfield,	–	–	–	–	–	–	–
North Reading,	–	–	14	–	–	–	–
Northampton,	59	153	161	–	7 cattle, 4 hogs.	8 tuberculosis, 2 hog cholera, 1 hepatitis.	11 rendered.
Northborough,	2	10	83	13	1 hog.	1 tuberculosis.	1 rendered.
Northbridge,	7	1	66	–	1 cow.	1 tuberculosis.	1 buried.
Northfield,	16	10	132	1	–	–	–
Norton,	4	2	51	–	–	–	–
Norwell,	2	9	172	–	1 hog.	1 nephritis.	1 buried.
Norwood,	–	–	–	–	–	–	–
Oak Bluffs,	–	–	–	–	–	–	–
Oakham,	1	26	2	–	–	–	–
Orange,	–	–	–	–	–	–	–
Orleans,	10	5	87	–	1 hog.	1 inspector not present.	1 rendered.
Otis,	30	6	37	21	–	–	–
Oxford,	–	1	94	–	1 hog.	1 tuberculosis.	1 buried.

Palmer,	198	73	122	–	4 cattle, 3 calves, 2 hogs.	5 tuberculosis, 3 immature, 1 liver flukes.	7 rendered, 1 buried, 1 compost.
Paxton,	8	7	3	–	– –	– –	– –
Peabody,	114	169	472	–	16 hogs.	16 hog cholera.	16 rendered.
Pelham,	–	–	–	–	– –	– –	– –
Pembroke,	3	3	61	–	– –	– –	– –
Pepperell,	–	–	–	–	– –	– –	– –
Peru,	–	–	–	–	– –	– –	– –
Petersham,	–	–	–	–	– –	– –	–
Phillipston,	9	12	51	–	– –	– –	– –
Pittsfield,	105	37	51	2	13 cattle, 2 sheep.	15 tuberculosis.	15 rendered.
Plainfield,	–	13	36	–	– –	– –	– –
Plainville,	–	–	2	–	– –	– –	– –
Plymouth,	28	13	149	–	1 hog.	1 hog cholera.	1 rendered.
Plympton,	–	–	12	–	– –	– –	– –
Prescott,	–	–	11	–	– –	– –	– –
Princeton,	11	49	75	4	– –	– –	– –
Provincetown,	1	–	145	–	1 hog.	1 hog cholera.	1 buried.
Quincy,	–	–	–	–	– –	– –	– –
Randolph,	–	–	–	–	– –	– –	– –
Raynham,	2	6	9	2	– –	– –	– –
Reading,	335	54	122	–	6 cattle, 4 calves.	6 tuberculosis, 4 immature.	10 rendered.
Rehoboth,	74	224	101	–	– –	– –	– –
Revere,	–	–	–	–	– –	– –	– –
Richmond,	–	–	–	–	– –	– –	– –
Rochester,	–	–	–	–	– –	– –	– –
Rockland,	–	–	–	–	– –	– –	– –
Rockport,	–	–	–	–	– –	– –	– –
Rowe,	15	–	18	–	– –	– –	– –
Rowley,	20	57	60	–	– –	– –	– –
Royalston,	8	12	72	2	– –	– –	– –
Russell,	4	10	40	–	– –	– –	– –
Rutland,	–	–	–	–	– –	– –	– –
Salem,	–	–	122	–	– –	– –	– –
Salisbury,	–	–	–	–	– –	– –	– –
Sandisfield,	–	–	–	–	– –	– –	– –
Sandwich,	–	–	–	–	– –	– –	– –

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, OCT. 1–DEC. 31, 1912 — *Continued.*

CITIES AND TOWNS.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnations.	Disposition of Carcasses.
Saugus,	–	–	19	–	– –	– –	– –
Savoy,	–	–	–	–	– –	– –	– –
Scituate,	–	–	–	–	– –	– –	– –
Seekonk,	26	9	131	–	2 hogs.	2 tuberculosis.	2 buried.
Sharon,	–	–	–	–	– –	– –	– –
Sheffield,	–	–	–	–	– –	– –	– –
Shelburne,	69	6	97	70	3 cattle.	3 tuberculosis.	3 rendered.
Sherborn,	–	–	–	–	– –	– –	– –
Shirley,	–	–	–	–	– –	– –	– –
Shrewsbury,	36	183	264	11	– –	– –	– –
Shutesbury,	4	3	13	–	– –	– –	– –
Somerset,	8	–	90	–	– –	– –	– –
Somerville,	–	–	118	–	4 hogs.	1 tuberculosis, 3 hog cholera.	4 rendered.
South Hadley,	–	–	–	–	– –	– –	– –
Southampton,	53	39	50	–	1 calf.	1 immature.	1 rendered.
Southborough,	–	–	–	–	– –	– –	– –
Southbridge,	26	25	104	2	– –	– –	– –
Southwick,	9	40	213	19	– –	– –	– –
Spencer,	27	57	92	2	– –	– –	– –
Springfield,	1	7	90	–	1 hog.	1 tuberculosis.	1 rendered.
Sterling,	12	159	74	–	1 cow, 2 calves.	1 tuberculosis, 2 immature.	3 buried.
Stockbridge,	–	–	–	–	– –	– –	– –
Stoneham,	3	1	69	–	1 cow.	1 tuberculosis.	1 rendered.
Stoughton,	10	26	36	–	– –	– –	– –
Stow,	–	–	–	–	– –	– –	– –
Sturbridge,	130	111	108	11	– –	– –	– –
Sudbury,	–	7	8	–	– –	– –	– –
Sunderland,	–	13	20	–	– –	– –	– –
Sutton,	22	106	129	–	– –	– –	– –
Swampscott,	–	–	–	–	– –	– –	– –
Swansea,	180	162	171	60	5 cattle.	5 tuberculosis.	5 rendered.

Taunton, . . .	166	58	493	–	– –	– –	– –
Templeton, . . .	11	9	65	9	– –	– –	– –
Tewksbury, . . .	58	35	102	–	1 cow.	1 pneumonia.	1 rendered.
Tisbury, . . .	–	–	4	–	– –	– –	– –
Tolland, . . .	–	–	–	–	– –	– –	– –
Topsfield, . . .	1	56	73	1,235	6 calves.	1 tuberculosis, 5 immature.	6 rendered.
Townsend, . . .	–	–	–	–	– –	– –	– –
Truro, ...	2	–	52	–	– –	– –	– –
Tyngsborough, . .	–	1	8	–	– –	– –	– –
Tyringham, . . .	8	–	44	–	– –	– –	– –
Upton, ...	1	–	30	–	– –	– –	– –
Uxbridge, . . .	11	1	106	–	2 cattle, 1 hog.	3 tuberculosis.	2 rendered, 1 buried.
Wakefield, . . .	–	–	58	–	– –	– –	– –
Wales, ...	–	–	–	–	– –	– –	– –
Walpole, . . .	–	1	204	1	– –	– –	– –
Waltham, . . .	–	–	27	–	– –	– –	– –
Ware, ...	18	36	119	–	– –	– –	– –
Wareham, . . .	–	–	–	–	– –	– –	– –
Warren, . . .	25	40	138	2	1 calf.	1 tuberculosis.	1 rendered.
Warwick, . . .	–	–	–	–	– –	– –	– –
Washington, . . .	2	10	32	6	– –	– –	– –
Watertown, . . .	500	330	200	–	9 cattle, 14 calves, 2 hogs.	8 tuberculosis, 14 immature, 2 bruised, 1 jaundice.	25 rendered.
Wayland, . . .	–	6	96	5	– –	– –	– –
Webster, . . .	–	6	44	–	– –	– –	– –
Wellesley, . . .	–	–	–	–	– –	– –	– –
Wellfleet, . . .	4	1	36	–	– –	– –	– –
Wendell, . . .	17	13	53	17	– –	– –	– –
Wenham, . . .	–	–	–	–	– –	– –	– –
West Boylston, . .	–	1	14	–	– –	– –	– –
West Bridgewater, . .	5	152	313	–	16 calves.	16 immature.	16 rendered.
West Brookfield, . .	15	27	36	–	– –	– –	– –
West Newbury, . .	–	–	–	–	– –	– –	– –
West Springfield, . .	–	–	–	–	– –	– –	– –
West Stockbridge, . .	1	20	–	–	– –	– –	– –

Quarterly Report on Slaughtering Inspection, Oct. 1–Dec. 31, 1912 — *Concluded.*

Cities and Towns.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
West Tisbury,	11	–	5	65	–	–	–
Westborough,	–	8	70	–	2 hogs.	2 tuberculosis.	2 rendered.
Westfield,	64	19	205	–	4 cattle, 1 calf.	2 tuberculosis, 1 dead, 1 decomposed, 1 immature.	2 rendered, 3 buried.
Westford,	9	202	164	–	2 calves, 2 hogs.	2 tuberculosis, 1 immature, 1 burned.	4 rendered.
Westhampton,	–	–	–	–	–	–	–
Westminster,	7	–	100	–	1 hog.	1 tuberculosis.	1 buried.
Weston,	16	292	55	2	1 cow, 49 calves, 1 hog.	1 cirrhosis, 49 immature, 1 poisoned.	51 rendered.
Westport,	118	108	545	32	3 calves, 3 hogs.	3 immature, 2 tuberculosis, 1 hog cholera.	5 rendered, 1 fed to hogs.
Wesswood,[1]	–	–	–	–	–	–	–
Weymouth,	–	–	–	–	–	–	–
Whately,	–	–	–	–	–	–	–
Whitman,	–	–	–	–	–	–	–
Wilbraham,	11	1	95	–	–	–	–
Williamsburg,	–	–	–	–	–	–	–
Williamstown,	46	154	218	749	3 cattle.	3 tuberculosis.	1 rendered, 2 buried.
Wilmington,	16	137	438	–	6 calves, 11 hogs.	6 immature, 11 hog cholera.	17 rendered.
Winchendon,	–	–	–	–	–	–	–
Winchester,	–	–	–	–	–	–	–
Windsor,	–	–	–	–	–	–	–
Winthrop,	–	–	–	–	–	–	–
Woburn,	2	38	1,460	–	1 calf, 4 hogs.	1 immature, 4 tuberculosis.	5 rendered.
Worcester,	797	471	1,010	3	21 cattle, 14 calves, 8 hogs.	21 tuberculosis, 14 immature, 8 measles.	43 rendered.]
Worthington,	–	–	62	5	–	–	–
Wrentham,	–	–	–	–	–	–	–
Yarmouth,	–	–	–	–	–	–	–

[1] Reports received too late to classify.

SUMMARY.

Total number of carcasses inspected,			53,835
(a) Cattle,		9,509	
(b) Calves,		16,739	
(c) Hogs,		24,575	
(d) Sheep,		3,012	
Total number of carcasses passed,			52,314
Total number of carcasses condemned,			756
(a) Cattle,		233	
(b) Calves,		350	
(c) Hogs,		166	
(d) Sheep,		7	
Reasons for condemnation: —			
(a) Tuberculosis,		297	
Cattle,	217		
Calves,	6		
Hogs,	72		
Sheep,	2		
(b) Immature,		305	
Calves,	305		
(c) Hog cholera,		61	
Hogs,	61		
(d) Cirrhosis,		2	
Cattle,	2		
(e) Measles,		8	
Hogs,	8		
(f) Septicæmia,		3	
Cattle,	2		
Hog,	1		
(g) Nephritis,		3	
Hogs,	3		
(h) Peritonitis,		3	
Calves,	2		
Hog,	1		
(i) Trachina,		1	
Hog,	1		
(j) Hepatitis,		1	
Hog,	1		
(k) Uremia,		1	
Hog,	1		

Reasons for condemnation — *Continued.*		
(l) Anemia,		1
Sheep,	1	
(m) Caseous lymphadenitis,		3
Sheep,	3	
(n) Icterus,		1
Hog,	1	
(o) Pneumonia,		2
Cattle,	1	
Hog,	1	
(p) Pleuropneumonia,		1
Hog,	1	
(q) Paralysis,		2
Hogs,	2	
(r) Poisoned,		1
Hog,	1	
(s) Liver flukes,		1
Hog,	1	
(t) Jaundice,		1
Hog,	1	
(u) Contusions,		1
Hog,	1	
(v) Milk fever,		1
Cow,	1	
(w) Tumors,		2
Cattle,	2	
(x) Large abscess,		2
Cow,	1	
Hog,	1	
(y) Emaciated,		1
Hog,	1	
(z) In weakened condition,		8
Calves,	8	
(aa) Bruised,		18
Cattle,	4	
Calves,	14	
(bb) Dead on arrival,		15
Calves,	15	

SUMMARY — *Concluded.*

Reasons for condemnation — *Concluded.*

(*cc*) Broken hip,		1	
Cow,	1		
(*dd*) Burned,		1	
Hog,	1		
(*ee*) Decomposed,		2	
Cow,	1		
Hog,	1		
(*ff*) Unfit for food,		2	
Hogs,	2		
(*gg*) Natural death,		3	
Cattle,	2		
Sheep,	1		
(*hh*) Inspector not present,		1	
Hog,	1		
Total reasons,			756

Disposition of carcasses: —

(*a*) Rendered,		671	
Cattle,	213		
Calves,	320		
Hogs,	131		
Sheep,	7		
(*b*) Buried,		60	
Cattle,	14		
Calves,	11		
Hogs,	35		

Disposition of carcasses — *Concluded.*

(*c*) Fed to hogs,		9	
Cow,	1		
Calves,	8		
(*d*) Fed to hens,		9	
Calves,	9		
(*e*) Fed to hens and hogs,		5	
Calves,	5		
(*f*) Compost,		1	
Calf,	1		
(*g*) Consumed by owner,		1	
Calf,	1		
Total dispositions,			756

Of the above cities and towns, the following reported no slaughterhouse within their limits: —

Bourne.
Boxborough.
Plainville.
Prescott.
Sunderland.
Westhampton.
Whitman.

The following cities and towns reporting upon the work of inspection rendered "Nothing to report:" —

Boxborough.
Malden.
Medford.
Middleton.
Natick.
Newton.
Stow.
Westhampton.
Whitman.

REPORT ON INSPECTION OF DAIRIES.

During the month of January, 1913, 264 dairies were examined in the following places: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Bedford,	7	2	28.57	5	71.43
Second inspection,	4	2	50.00	2	50.00
Third inspection,	31	12	38.71	19	61.29
Bernardston,	13	2	15.38	11	84.62
Greenfield,	18	5	27.78	13	72.22
Second inspection,	27	11	40.74	16	59.26
Lincoln,	11	7	63.64	4	36.36
Second inspection,	2	2	100.00	–	–
Third inspection,	24	13	54.17	11	45.83
Natick,	7	5	71.43	2	28.57
Second inspection,	5	3	60.00	2	40.00
Third inspection,	14	11	78.57	3	21.43
Newton,	13	9	69.23	4	30.77
Second inspection,	6	5	83.33	1	16.67
Third inspection,	38	23	60.53	15	39.47
Wayland,	12	8	66.67	4	33.33
Second inspection,	1	–	–	1	100.00
Third inspection,	25	15	60.00	10	40.00
Weston,	3	2	66.67	1	33.33
Third inspection,	3	2	66.67	1	33.33

Total number of dairies examined,	264
Number found to be free from objectionable conditions,	139
Number concerning which letters were sent,	125
Total number of conditions to which attention was called,	407
Percentage of dairies which passed inspection,	52.65

In addition to the above, 96 dairies were visited at which the sale of milk had been discontinued.

Included in the total number of dairies visited were 84 which had recently started in the milk-producing business and were inspected for the first time.

The names of the owners of the dairies found to be worthy of commendation follow: —

Bedford.

Class B.

Brown, R. W.‡ †
Canlett, T. G.‡ †
Cram, S.‡
Fletcher, M.* †
Kelley, John J.*
Macurda, W. E.‡
Meyers, Michael ‡ §
Pickman, D. L.‡ §
Plastridge, W. C.‡ §
Rosenthal, A.‡
Skene, George
Spreadby, J. W.‡ §
"Town Farm" ‡ §
Wiggins, H.‡
Williams, D. B.‡
Wright, W. H.

Bernardston.

Class B.

Clogston, H. W.
Doolittle, Leon L.

Greenfield.

Class A.

Reed, F. H.
Wilson, John

Class B.

Allen, H. F. & J. F.* †
Bassett, William R.*
Bullard, Mrs. Laura * †
Cobb, Clarence *
Cowan, Frederick A.* †
Garrett, Frank * †
Newcomb, A. S.
Parmenter, E. T. & Son * †
Parmenter, H. A.
Potter, Warren *
Purrington, W. C.* †
Snyder, H. H.* †
Taylor, E. E.
"Town Farm" *

Lincoln.

Class A.

Blodgett, W. A.‡ §
DeNormandie, W. J.‡ †
Schuyler; P. L.

Class B.

Bowles, William
Bradstreet, Byron *
Brennan, J. P.
Browning, G. U.‡
Cohen, John
Conners, Michael
Cook, J. B.‡
Cunnert, Carl T.*
Dee, Estate of John ‡
Farquhar, David ‡
Moore, L. W.
Nelson, Estate of Geo. H.‡
Nevelle, Martin ‡
O'Brien, James
Sherman, Daniel E.‡
Sherman, Roger ‡
Wheeler, C. Edgar ‡
Wheeler, Charles S.‡

Natick.

Class AA.

Burks, E. W.* †
Clover Hill Farm, Inc. (W. S. Patten)‡ §

Class A.

Felch, Rev. Albert A.
Goldrick, Henry P.
Hanchett, George D.
Hopewell, John * †
Patterson, Arthur W.
Robinson, Dr. John W.
Stillman, C. S.‡ §

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Reported favorably on all previous inspections.

Class B.

Bolser, Theodore ‡	Lyford, W. C.‡	Watts, Samuel ‡
Boswell, Leon P.‡	Sellew, L. L.‡	Whittemore, Charles ‡ §
Brown, L. Alvin ‡ §	Thorp, Amasa L.‡	Wingott, E. & J. T.* †
	"Town Farm" ‡	

Newton.

Class AA.

Ellis, George H.‡ §

Class A.

Bacon Farm ‡ §	Janse, John ‡	Smith, D. F.

Class B.

Barry, M.‡ §	Kearney, David F.*	Schroot, Mrs. C.‡
Bettencourt, John ‡	Kincare, John E.‡ §	Schworer, John F.*
Carey, John F.‡	Leonard, Patrick * †	Schworer, Matilda ‡
Cunningham, Mrs. Mary ‡ §	Maloney, Martin * †	Shick, Jacob
Ellis, James F.‡	Marcy, G. L.‡	Switzer, Charles S.
Flannery, P. J.‡	McHugh, Margaret	Twomey, M. J.* †
Frye, Theophilus ‡ §	McNamara, Jeremiah	Waters, Patrick ‡ §
Grinspoon, S.	O'Brien, John ‡ §	Watt, Joseph B.‡
Hammel, Mrs. Henry ‡	Olson, Andrew J.	White, John J.
Hawkes, George W.‡ §	Paul, Estate of L.‡	Wiswall, George B.‡ §
Hitchcock, Fred F.‡	Santuson, Benjamin	Wiswall, William E.‡

Wayland.

Class A.

Green, E. F.	Shaw, Francis ‡ §	Sherman, A. B.‡

Class B.

Barker, Charles ‡ §	Garvey, Thomas	Lovell, William S.
Brown, James ‡	Hastings, A. B.	Parmenter, J. M.‡
Curtin, John N.‡	Holmes, Alexander ‡	Parmenter, J. W.‡
Cutting, C. A.‡	Lawrence, E. F.	Poole, Henry
Damon, Isaac ‡	Linehan, Timothy ‡	Temple, M.‡
Fox, James ‡	Loring, Miss A. P.‡ †	Wilbur, George
	Loker, Sidney ‡	Zoller, W.

Weston.

Class A.

Jones, Charles H.

Class B.

Irving Brothers ‡	Jennings, Edward ‡ §	Wellington, A. W.

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Reported favorably on all previous inspections.

THE ABATEMENT OF NUISANCES.[1]

By Elliott Washburn, M.D., State Inspector of Health, South Midland Health District.

The purpose of this paper is to aid local boards of health, more especially those of small towns, in that part of their duties which requires them to cause the abatement of nuisances.

Although boards of health and other health authorities customarily consider as nuisances those conditions which are sources of filth and causes of sickness or productive of objectionable odors, the Supreme Court of Massachusetts has ruled that "In order to amount to a nuisance it is not necessary that the corruption of the atmosphere should be such as to be dangerous to health; it is sufficient that the effluvia are offensive to the senses, and render habitations uncomfortable." Within this ruling come, for example, obnoxious odors from rendering establishments, and, undoubtedly the majority of the nuisances most commonly observed.

Groups of Nuisances. — For the purposes of this paper it will be practical to divide nuisances into two groups, according as complaint is frequently or infrequently made to boards of health. The first group, which may be called "ordinary nuisances," includes such conditions as overflowing or otherwise objectionable cesspools, privy vaults and sink drains, filthy privies, dumps, yards, pigpens, poultry yards and stables and dead animals. These are the nuisances most frequently called to the attention of boards of health of the smaller cities and towns, and may be dealt with under the general laws concerning nuisances. The second group may be styled "unusual nuisances" and includes low, wet and spongy lands, dwellings unfit for habitation, offensive trades and smoke. Nuisances arising from defective plumbing in houses may also be included in this group. The boards of health of small towns are seldom called upon to investigate nuisances in this group, the abatement of which is regulated by certain specific laws.

The Abatement of Ordinary Nuisances.

Receipt of Complaint. — If a board of health has knowledge of a nuisance in its town its duty is to cause its abatement without waiting until a complaint is filed. As a matter of fact, however, especially in towns, the board is apt to remain inactive until complaint of the nuisance is lodged with it. This may be done orally, but more properly

[1] Read before the Conference of the Association of Boards of Health, Southern Bay and Cape Health District, Barnstable, Mass., July 11, 1912.

in writing. When received over the telephone the member of the board who takes the message should in every instance ascertain the complainant's name. This is sometimes refused until assurance is given to the complainant that his name will not be mentioned or revealed and that it is desired merely as an indication of his good faith. If the complainant still refuses to give his name the board is justified in declining to take action unless in exceptional cases. A similar course may be pursued toward anonymous letters of complaint. It is desirable to require complaints to be submitted, as far as possible, in writing, in order that they may be preserved as records.

Method of Procedure. — Several methods of procedure for the abatement of a nuisance are open to the board. First of all, before taking any action, the members of the board should thoroughly familiarize themselves with the various laws on the subject. These may be studied most easily in the "Manual of the Laws Relating to the Public Health with Decisions of the Supreme Court of Massachusetts Relative thereto," prepared and issued by the Massachusetts State Board of Health. A copy of this manual is sent as soon as issued to every board of health in the State. In the 1911 edition the general laws covering ordinary nuisances may be found on pages 39 to 45, inclusive, and are sections 65 to 90, inclusive, of chapter 75 of the Revised Laws. There it will be found that —

"The board of health shall examine into all nuisances, sources of filth and causes of sickness within its town, which may in its opinion be injurious to the public health. . . ." [A part of section 65, chapter 75, Revised Laws.] This section further gives power to boards of health to make regulations relative to nuisances.

"Said board shall order the owner or occupant of any private premises, at his own expense, to remove any nuisance within twenty-four hours or within such other time as it deems reasonable, after notice." [A part of section 67 of the same chapter 75.]

By section 74 of said chapter 75 the board is empowered to enter any land, building or premises or go upon a vessel within its town for the purpose of examining into, removing or preventing a nuisance, and if obstructed in such entrance shall have assistance.

The legal form of order to abate a nuisance and the method of serving it are described in section 63 of said chapter 75, while the penalty for violation of such order is found in section 67 of the same chapter.

Powers of Local Boards of Health. — It will be seen that the board has ample power to investigate nuisances wherever located in its town and to issue orders for their abatement. It is well for the board to

understand thoroughly its powers and limitations before proceeding to the investigation of a complaint and the subsequent issuing of an order, lest it be placed in the awkward position of issuing orders which cannot be enforced. The Massachusetts Supreme Court, *e.g.*, has decided that a board of health cannot order the owner or occupant of private premises to abate a nuisance in a specific way, but that the owner may abate it in any proper manner. That is to say, if a board of health orders the abatement of a nuisance by any particular mode, the owner or occupant of the premises on which the nuisance exists is not restricted to that mode; and, indeed, "an order of the board of health (under chapter 75, section 67, above quoted) directing the owner or occupant of land to remove a nuisance in a specific manner, is void." The board, then, can merely order the nuisance to be abated and must leave the manner of its abatement to the owner or occupant.

Investigation of Complaint. — It is customary for those boards of health which have a duly appointed agent to send that official to investigate the alleged nuisance and to base their action upon his report to them. When, however, as in the case of small towns, the board has no such officer, it may as a body visit the premises, or it may delegate that power to one or more members of the board who shall investigate and report upon the conditions found. The person who makes the investigation must use tact and common sense, for by a display of the former he may gain the good will of the owner or occupant of the premises, which will be of material gain in procuring the desired improvements, while by an exercise of the latter quality he will be able to take an equitable view of those alleged nuisances which have their foundation in neighborhood quarrels or those which may be called "spite nuisances." In other words, he should consider whether the complaint is made in good faith or whether it is made by one having a grudge against a neighbor, landlord or fellow tenant. If an actual nuisance exists, however, the source of the complaint may well be entirely disregarded.

Notification to Owner. — If the report of the investigator is to the effect that a nuisance exists, the board should proceed to cause its abatement. While the law provides (section 68 of chapter 75 quoted above) that an order shall be served upon the owner or occupant of the premises, experience has taught that if the board sends such an order as the first notification of the nuisance to the owner or occupant, that person is apt to be sulky and delay proceedings as much as possible. Of course, where it is imperative that the nuisance should be abated immediately and the board has reason to believe, from prior experience, that the owner will do nothing until forced to act, it would be a waste of time to try any other method first. Usually, however, the best results may be obtained

with the least hard feeling on the part of the owner if the latter can be seen in person by the member of the board who thinks he can best deal with him, and can best explain what the board desires. In the majority of instances the owner will at once abate the nuisance. In any event the board learns his attitude in the matter, which is useful if further proceedings become necessary. If, however, for any reason it is inexpedient to see the owner or occupant personally, a letter may be sent to him, of which the following may serve as a suitable copy: —

City or Town............ Date...........

Richard Roe, 65 Dean Street (City or Town).

DEAR SIR: — The board of health desires to call to your attention certain nuisances consisting of an overflowing cesspool and sink drainage running over the ground on property of which you are the owner, numbered 65 Dean Street. Will you please abate this nuisance within one week from this date? Kindly acknowledge the receipt of this letter.

Yours very truly,

JAMES BROWN,
Agent, Board of Health.

Board may make Suggestions. — While, as stated above, it cannot order the abatement of a nuisance by any particular mode, it is likely to be asked by the owner or occupant for suggestions as to the most practical and inexpensive method of doing the work. It is well, therefore, for the member of the board or the agent who makes the original investigation to consider this question at the time of his examination, in order that the board may have some reasonable suggestions in mind. Not infrequently the owner or occupant will ask for an extension of time in which to make the necessary changes, in which event the board should grant or deny, according to the nature of the nuisance. In this connection one must consider whether immediate abatement is imperative, whether the request is made in good faith and whether the financial ability of the owner will allow him to make changes entailing considerable expense at the particular time when the order is served upon him. If an extension of time is granted it should be for a definite period, and the owner should be given to understand that a second extension will not be granted.

When to send the Legal Order. — If after the lapse of the stated time these methods have proved ineffectual, if the nuisance still exists and the owner or occupant has manifested no intention of complying with the requests of the board, the latter may very well send to him the legal order set forth in section 68 of chapter 75, previously quoted.

Board should record its Proceedings. — Before sending this order it is well for the board to hold a meeting and pass a vote somewhat as follows: —

The board of health hereby adjudicates that nuisances, sources of filth and causes of sickness, consisting of an overflowing cesspool and sink drainage running upon the ground, exist upon premises owned by Richard Roe at No. 65 Dean Street, and it is hereby voted that legal order be served upon said owner to abate said nuisances within one week from the date of the service of the order.

This vote should be made a part of the records of the meeting and may be found useful if the matter is carried subsequently to the court.

The Legal Order. — The board may then cause the legal order to be drawn up. This order must be in writing and should state the nature of the nuisance and its location, and must specify a reasonable time for the completion of the work. It should be addressed to the owner, occupant or agent of the property. The time specified will vary, necessarily, with different nuisances; for example, to clean out an overflowing cesspool or vault forty-eight hours is a reasonable time, even in the country; while, on the other hand, to construct a new cesspool or vault or to repair an old one might require one or two weeks, as men are not always available for such work at short notice.

A majority of the board, or preferably each member, should sign the order, one form of which, containing the officer's return, has successfully stood the test of a district court and is here given: —

City or Town............ Date...........

To Richard Roe, 65 Dean Street (*City or Town*).

SIR: — There are nuisances, sources of filth and causes of sickness upon the premises numbered 65 Dean Street of which you are the owner. Said nuisances consist of an overflowing cesspool and sink drainage running upon the ground. You are hereby ordered to abate said nuisances, at your own expense, within one week of the date of service of this order. Otherwise you will be proceeded against according to law.

Very truly yours,

JAMES BROWN,
ROBERT ROSS,
PETER PALMER,
Board of Health of City or Town.

(Date)

.... ss. ....

I have this day served an order, of which the above is a true copy, upon the above-named Richard Roe, by leaving the same in his hand (or at his last and usual place of abode).

....

Deputy Sheriff or Constable.

How the Order is served. — An exact duplicate of the order should be made, and both copies should be signed exactly alike by at least a majority of the board. It must be served by an officer authorized to serve civil processes, as a bonded constable or a deputy sheriff, upon the person named in the order, by personal service or, if he cannot be easily found, by leaving it at his last and usual place of abode. The officer serves one copy and returns the other copy to the board, bearing upon it the official return of the officer as indicated above. This return copy should be filed by the board for future court proceedings if such become necessary. The officer's fee for serving is paid by the city or town.

Proceedings when Order is violated. — At the end of the time specified in the order the board should ascertain whether the nuisance has been abated; if not, and abatement is not in progress and nothing has occurred to give the board reason to believe that the owner or occupant intends to abate the nuisance or has given the necessary directions for the work to be done, two courses are open to the board: (1) it may, under the power bestowed by section 69 of chapter 75, quoted above, proceed to remove the nuisances at the owner's expense; or (2) it may enter complaint in the district court against the person named in the order for violation of said order.

Abatement of Nuisance by Board. — The first course, by which the board itself removes the nuisance, is unsatisfactory; it means that the board must procure men and materials and incur expenses which must primarily be paid by the town, but which may subsequently be recovered from the owner of the premises by an action of contract. It is very apparent that the recovery of money spent by the town in abating a nuisance may be a source of annoyance to the town if the owner chooses to compel the town to resort to the court in order to recover the money. As a matter of fact this method is seldom employed in abating a nuisance.

Complaint to Court. — The second course, a complaint to the district court that the owner has violated the order of the board, is usually just as efficacious in securing the abatement of the nuisance as the first method, and costs the town nothing. It is necessary for a member of the board, provided with the record of the meeting of the board at which it was voted to send the legal order, and with the officer's return copy of the order, to appear before the clerk of the district court for the town and there swear to a complaint that the owner or occupant did violate the order of the board. The clerk will desire to see the return copy of the order, and will make out the complaint based upon it, and will desire the names of one or two witnesses, including the member who makes the complaint; he will summon the defendant and the witnesses to appear in

court on a certain day. The record of the meeting of the board and the return copy of the order may be desired in evidence by the judge, and should be in readiness. The defendant usually pleads guilty, and the judge is quite apt to ask the member of the board as to what disposition of the case will be satisfactory to the board. Inasmuch as the interest of the board is the abatement of the nuisance rather than to have the defendant fined a sum of money, it may very well reply that it will be satisfactory to the board if the case be laid on file for a week, upon condition that the defendant agrees to abate the nuisance before the expiration of that time. The judge usually accepts this suggestion, the defendant abates the nuisance and that ends the matter, as at the end of the week the judge discharges the owner without fine. The mere fact that he has been brought into court usually is sufficient to bring the owner to his senses. This course costs the town nothing and is far more satisfactory than the first course. If, however, the defendant is fined and still neglects to abate the nuisance, the board may fall back upon the first method.

The Abatement of Unusual Nuisances.

Unusual Nuisances. — When we come to those nuisances which are comparatively seldom complained of to the boards of health of small towns, such as low, wet and spongy land, offensive trades, such as rendering, soap-making, glue-making and tanning, dwellings unfit for habitation by reason of filth or overcrowding and smoke nuisances, we find that each is the subject of special laws which are given in full in the manual of health laws before referred to. As these laws are very specific, a board may readily follow their directions. When the board is in doubt as to its duties and powers and as to the proper method of procedure, it may ask the advice of the State Inspector of Health of that district. If legal opinion is sought the town's counsel should be consulted.

The abatement of all nuisances, in short, is entirely within the jurisdiction of local boards of health. The State Board of Health has no authority other than advisory, chiefly through the State Inspectors of Health, except in dealing with the so-called offensive trades.

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OF

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TABLE OF CONTENTS.

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The State Board of Publication.

RETURNS OF DISEASES.

Cases of Diseases declared by the State Board of Health to be Dangerous to the Public Health.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending—				
	Feb. 1.	Feb. 8.	Feb. 15.	Feb. 22.	Total.
Diphtheria,	156	143	153	120	572
Measles,	918	993	1,162	1,074	4,147
Scarlet fever,	260	239	236	214	949
Typhoid fever,	31	39	42	27	139
Tuberculosis, pulmonary (or not classified),	139	156	140	163	598
Tuberculosis, other than pulmonary,	12	6	9	6	33
Cerebro-spinal meningitis,	4	1	6	2	13
Whooping cough,	56	54	68	69	247
Varicella,	116	118	166	139	539
Ophthalmia neonatorum,	42	30	35	43	150
Anterior poliomyelitis,	–	–	1	2	3
Smallpox,	4	–	1	1	6
Trachoma,	1	–	–	3	4
Typhus fever,	–	–	–	1	1
Tetanus,	–	1	–	–	1
Glanders,	–	–	–	1	1

Cases of Infectious Diseases not included in the Above Table.

[Cases not notifiable under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending —				
	Feb. 1.	Feb. 8.	Feb. 15.	Feb. 22.	Total.
Mumps,	31	16	24	18	89
Erysipelas,	1	–	–	–	1
Anthrax,	1	–	–	–	1

Note. — These totals are somewhat too high, as some cases are reported twice. For example, a case may be reported first by the home town and again by a neighboring town to which it has gone for treatment.

RETURNS OF DEATHS.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health.

[Weekly voluntary returns of deaths from cities and towns of more than 10,000 population.]

Week ending Feb. 1, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported (All Causes).	Deaths under Five Years (All Causes).	Deaths from Diseases Dangerous to the Public Health.								
				Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	229 [1] 252 [2]	51 [1] 57 [2]	43 [1] 48 [2]	26 [1] 27 [2]	4 [1] 6 [2]	5 [1] 5 [2]	– [1] – [2]	– [1] – [2]	3 [1] 4 [2]	3 [1] 3 [2]	2 [1] 3 [2]
Worcester,	145,986	37	8	3	2	1	–	–	–	–	–	–
Fall River,	119,295	45	21	7	4	1	–	–	2	–	–	–
Lowell,	106,294	30	13	2	2	–	–	–	–	–	–	–
Cambridge,	104,839	38	13	7	5	1	–	–	–	–	–	1
New Bedford,	96,652	38	16	7	3	–	4	–	–	–	–	–
Lynn,	89,336	31	7	4	2	1	1	–	–	–	–	–
Springfield,	88,926	39	8	3	2	1	–	–	–	–	–	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	23	5	1	–	1	–	–	–	–	–	–
Holyoke,	57,730	17	5	3	2	–	1	–	–	–	–	–
Brockton,	56,878	9	1	–	–	–	–	–	–	–	–	–
Malden,	44,404	14	4	2	–	–	2	–	–	–	–	–
Haverhill,	44,115	19	6	6	3	–	1	–	1	–	1	–
Salem,	43,697	19	8	2	–	1	–	–	1	–	–	–
Newton,	39,806	12	4	1	–	1	–	–	–	–	–	–
Fitchburg,	37,826	19	6	2	1	–	–	–	–	1	–	–
Taunton,	34,259	9	3	2	1	–	–	1	–	–	–	–
Everett,	33,484	7	2	2	–	–	–	–	–	–	2	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	8	2	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	7	2	1	1	–	–	–	–	–	–	–
Waltham,	27,834	7	1	1	1	–	–	–	–	–	–	–
Brookline,	27,792	9	1	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	–	–	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	7	1	–	–	–	–	–	–	–	–	–
Medford,	23,150	5	2	–	–	–	–	–	–	–	–	–
North Adams,	22,019	8	2	2	2	–	–	–	–	–	–	–
Northampton,	19,431	8	1	–	–	–	–	–	–	–	–	–
Beverly,	18,650	3	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	3	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	5	1	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	3	1	–	–	–	–	–	–	–	–	–
Westfield,	16,044	7	2	1	1	–	–	–	–	–	–	–
Peabody,	15,721	–	1	–	–	–	–	–	–	–	–	–
Melrose,	15,715	3	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	5	1	2	2	–	–	–	–	–	–	–
Newburyport,	14,949	4	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	5	1	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	5	1	–	–	–	–	–	–	–	–	–
Clinton,	13,075	6	3	1	–	–	–	–	–	1	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	3	3	1	–	–	–	–	1	–	–	–
Framingham,	12,948	7	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	5	1	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	1	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	1	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	2	2	1	1	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	2	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	3	–	1	1	–	–	–	–	–	–	–
Greenfield,	10,427	3	1	1	–	–	–	–	–	–	1	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,399,194	793	216	114	63	14	14	1	5	6	7	4

[1] Nonresidents deducted.

[2] Total deaths.

Week ending Feb. 8, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported (All Causes).	Deaths under Five Years (All Causes).	Deaths from Diseases Dangerous to the Public Health.								
				Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	WhoopingCough.	Cerebro-spinal Meningitis.
Boston,	686,092	178[1] 203[2]	48[1] 55[2]	29[1] 31[2]	17[1] 18[2]	1[1] 1[2]	4[1] 5[2]	2[1] 2[2]	–[1] –[2]	2[1] 2[2]	3[1] 3[2]	–[1] –[2]
Worcester,	145,986	60	15	7	4	1	–	–	–	–	–	2
Fall River,	119,295	29	12	4	2	1	–	–	–	–	1	–
Lowell,	106,294	30	8	1	–	–	1	–	–	–	–	–
Cambridge,	104,839	–	–	–	–	–	–	–	–	–	–	–
New Bedford,	96,652	33	17	2	1	–	1	–	–	–	–	–
Lynn,	89,336	22	5	1	–	–	1	–	–	–	–	–
Springfield,	88,926	23	8	1	1	–	–	–	–	–	–	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	20	5	2	2	–	–	–	–	–	–	–
Holyoke,	57,730	20	10	1	1	–	–	–	–	–	–	–
Brockton,	56,878	13	3	1	1	–	–	–	–	–	–	–
Malden,	44,404	11	4	2	1	–	1	–	–	–	–	–
Haverhill,	44,115	15	4	3	–	–	–	3	–	–	–	–
Salem,	43,697	12	5	1	–	–	–	–	1	–	–	–
Newton,	39,806	7	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	14	7	4	1	–	–	–	–	3	–	–
Taunton,	34,259	15	1	1	1	–	–	–	–	–	–	–
Everett,	33,484	13	3	3	1	–	–	–	2	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	19	1	1	1	–	–	–	–	–	–	–
Pittsfield,	32,121	16	4	–	–	–	–	–	–	–	–	–
Waltham,	27,834	6	1	–	–	–	–	–	–	–	–	–
Brookline,	27,792	6	–	1	1	–	–	–	–	–	–	–
Chicopee,	25,401	–	–	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	4	4	–	–	–	–	–	–	–	–	–
Medford,	23,150	3	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	8	1	1	1	–	–	–	–	–	–	–
Northampton,	19,431	8	1	–	–	–	–	–	–	–	–	–
Beverly,	18,650	4	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	5	1	–	–	–	–	–	–	–	–	–
Leominster,	17,580	3	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	4	1	1	1	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	6	1	–	–	–	–	–	–	–	–	–
Woburn,	15,308	2	1	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	3	–	1	1	–	–	–	–	–	–	–
Gardner,	14,699	4	2	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	4	–	1	1	–	–	–	–	–	–	–
Clinton,	13,075	3	2	2	–	–	1	–	–	1	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	2	–	1	–	–	–	–	1	–	–	–
Framingham,	12,948	7	–	1	1	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	3	2	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	9	2	2	1	–	1	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	2	1	1	1	–	–	–	–	–	–	–
Arlington,	11,187	3	–	1	–	1	–	–	–	–	–	–
Greenfield,	10,427	3	1	1	–	–	–	–	–	–	1	–
Winthrop,	10,132	3	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,263,256	680	188	80	43	4	11	5	4	6	5	2

[1] Nonresidents deducted. [2] Total deaths.

Week ending Feb. 15, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported (All Causes).	Deaths under Five Years (All Causes).	Deaths from Diseases Dangerous to the Public Health.								
				Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Tyhpoid Fever.	Scarlet Fever.	Measles.	WhoopingCough.	Cerebro-spinal Meningitis.
Boston,	686,092	232 [1] 252 [2]	69 [1] 76 [2]	36 [1] 37 [2]	16 [1] 16 [2]	6 [1] 6 [2]	1 [1] 1 [2]	1 [1] 1 [2]	4 [1] 4 [2]	2 [1] 2 [2]	6 [1] 7 [2]	– [1] – [2]
Worcester,	145,986	52	12	4	1	2	–	–	–	–	–	1
Fall River,	119,295	47	18	5	3	1	–	1	–	–	–	–
Lowell,	106,294	28	8	4	3	–	1	–	–	–	–	–
Cambridge,	104,839	–	–	–	–	–	–	–	–	–	–	–
New Bedford,	96,652	34	8	2	1	1	–	–	–	–	–	–
Lynn,	89,336	28	5	2	2	–	–	–	–	–	–	–
Springfield,	88,926	27	8	3	–	2	1	–	–	–	–	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	26	6	3	1	1	–	–	–	1	–	–
Holyoke,	57,730	21	9	1	1	–	–	–	–	–	–	–
Brockton,	56,878	18	4	3	3	–	–	–	–	–	–	–
Malden,	44,404	11	–	4	2	–	2	–	–	–	–	–
Haverhill,	44,115	13	5	3	2	–	–	–	–	1	–	–
Salem,	43,697	14	6	2	1	–	1	–	–	–	–	–
Newton,	39,806	15	3	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	19	7	3	1	–	–	–	–	2	–	–
Taunton,	34,259	16	–	3	2	–	–	–	1	–	–	–
Everett,	33,484	15	2	3	1	–	–	–	1	–	1	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	13	1	2	–	–	–	2	–	–	–	–
Pittsfield,	32,121	17	4	1	1	–	–	–	–	–	–	–
Waltham,	27,834	3	1	–	–	–	–	–	–	–	–	–
Brookline,	27,792	5	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	6	3	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	4	1	–	–	–	–	–	–	–	–	–
Medford,	23,150	10	2	1	1	–	–	–	–	–	–	–
North Adams,	22,019	1	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	12	3	4	4	–	–	–	–	–	–	–
Beverly,	18,650	5	1	1	–	1	–	–	–	–	–	–
Revere,	18,219	6	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	6	4	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	8	–	1	1	–	–	–	–	–	–	–
Westfield,	16,044	3	1	1	1	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	4	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	5	4	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	5	–	1	–	–	–	1	–	–	–	–
Gardner,	14,699	4	1	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	7	1	3	3	–	–	–	–	–	–	–
Clinton,	13,075	7	3	1	–	–	1	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	3	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	6	2	1	1	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	5	1	1	–	1	–	–	–	–	–	–
Southbridge,	12,592	2	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	4	2	1	–	–	1	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	3	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	2	1	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,296,428	792	213	101	52	15	8	5	6	6	8	1

[1] Nonresidents deducted. [2] Total deaths.

Week ending Feb. 22, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported (All Causes).	Deaths under Five Years (All Causes).	Deaths from Diseases Dangerous to the Public Health.								
				Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	219[1] 253[2]	52[1] 58[2]	31[1] 43[2]	21[1] 24[2]	–[1] 2[2]	4[1] 6[2]	–[1] 3[2]	2[1] 3[2]	3[1] 4[2]	1[1] 1[2]	–[1] –[2]
Worcester,	145,986	61	19	6	4	1	–	1	–	–	–	–
Fall River,	119,295	53	26	7	5	–	1	–	–	–	1	–
Lowell,	106,294	42	9	5	4	1	–	–	–	–	–	–
Cambridge,	104,839	–	–	–	–	–	–	–	–	–	–	–
New Bedford,	96,652	25	7	4	3	1	–	–	–	–	–	–
Lynn,	89,336	22	2	4	4	–	–	–	–	–	–	–
Springfield,	88,926	36	8	5	2	–	–	–	2	1	–	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	37	4	6	3	–	3	–	–	–	–	–
Holyoke,	57,730	21	15	4	1	1	1	–	–	1	–	–
Brockton,	56,878	17	5	1	–	–	1	–	–	–	–	–
Malden,	44,404	12	2	1	1	–	–	–	–	–	–	–
Haverhill,	44,115	20	3	3	2	–	–	–	–	–	–	1
Salem,	43,697	16	3	3	2	–	1	–	–	–	–	–
Newton,	39,806	19	3	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	9	5	1	–	–	–	–	–	1	–	–
Taunton,	34,259	13	1	–	–	–	–	–	–	–	–	–
Everett,	33,484	8	3	2	1	–	–	–	–	–	1	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	16	5	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	19	6	2	1	–	–	–	–	–	–	1
Waltham,	27,834	10	3	3	2	–	1	–	–	–	–	–
Brookline,	27,792	12	1	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	15	–	7	1	–	–	–	–	–	6	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	4	2	1	1	–	–	–	–	–	–	–
North Adams,	22,019	10	2	–	–	–	–	–	–	–	–	–
Northampton,	19,431	14	–	2	2	–	–	–	–	–	–	–
Beverly,	18,650	7	1	–	–	–	–	–	–	–	–	–
Revere,	18,219	4	1	–	–	–	–	–	–	–	–	–
Leominster,	17,580	5	2	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	5	1	1	1	–	–	–	–	–	–	–
Westfield,	16,044	8	3	2	2	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	2	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	4	2	–	–	–	–	–	–	–	–	–
Gardner,	14,699	2	–	1	1	–	–	–	–	–	–	–
Marlborough,	14,579	8	1	1	1	–	–	–	–	–	–	–
Clinton,	13,075	5	1	3	1	1	–	–	–	1	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	9	3	4	2	–	–	–	2	–	–	–
Framingham,	12,948	9	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	6	3	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	3	1	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	5	4	1	–	1	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	3	–	1	–	–	–	–	–	–	–	1
Arlington,	11,187	3	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	3	1	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	4	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,278,041	859	216	124	71	8	14	4	7	8	9	3

[1] Nonresidents deducted. [2] Total deaths.

Deaths from Infectious Diseases not specifically mentioned in Above Tables.

[Weekly voluntary returns of deaths from cities and towns of more than 10,000 population.]

DISEASE.	Place.	Week ending — Feb. 1.	Feb. 8.	Feb. 15.	Feb. 22.
Acute lung diseases,	Boston,	38[1] 43[2]	38[1] 44[2]	42[1] 43[2]	36[1] 39[2]
	Worcester,	8	13	13	22
	Fall River,	14	9	11	17
	Lowell,	6	4	3	6
	Cambridge,	10	–	–	–
	New Bedford,	12	10	5	6
	Lynn,	5	5	2	1
	Springfield,	8	4	5	11
	Somerville,	8	1	6	7
	Holyoke,	1	6	6	7
	Brockton,	–	3	2	5
	Malden,	2	3	2	3
	Haverhill,	6	5	1	11
	Salem,	4	5	3	2
	Newton,	1	2	3	2
	Fitchburg,	3	2	6	3
	Taunton,	1	4	2	2
	Everett,	2	2	2	1
	Chelsea,	2	1	–	5
	Pittsfield,	2	5	3	3
	Waltham,	1	2	2	–
	Brookline,	3	–	–	2
	Chicopee,	–	–	2	3
	Gloucester,	3	–	–	–
	Medford,	1	1	1	–
	North Adams,	1	1	–	3
	Northampton,	1	–	2	–
	Beverly,	1	–	1	–
	Leominster,	1	1	4	–
	Attleborough,	1	–	2	1
	Westfield,	1	1	1	–
	Melrose,	–	–	–	2
	Woburn,	–	1	–	–
	Newburyport,	–	–	–	4
	Gardner,	1	–	2	–
	Marlborough,	–	2	–	1
	Clinton,	–	–	2	–
	Adams,	1	–	1	2
	Framingham,	4	2	1	2
	Watertown,	–	1	–	1
	Southbridge,	–	–	1	1
	Webster,	1	1	–	4
	Wakefield,	–	–	1	1
	Greenfield,	1	1	–	–
Diarrhœal diseases,	Boston,	2[1] 4[2]	7[1] 8[2]	4[1] 4[2]	3[1] 5[2]
	Worcester,	1	–	1	1
	Fall River,	2	4	6	9
	Lowell,	2	1	1	–
	Cambridge,	2	–	1	–
	New Bedford,	1	2	4	1
	Springfield,	3	1	1	1
	Holyoke,	2	–	–	–

[1] Nonresidents deducted. [2] Total deaths.

DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES — *Concluded.*

DISEASE.	Place.	Week ending — Feb. 1.	Feb. 8.	Feb. 15.	Feb. 22.
Diarrhœal diseases—*Con.*	Salem, . .	1	–	–	1
	Chicopee, . .	–	–	1	–
	Northampton, .	–	–	1	–
	Greenfield, . .	–	–	1	1
Erysipelas, . . .	Boston, . .	1[1]	–[1]	2[1]	–[1]
		1[2]	–[2]	2[2]	2[2]
	New Bedford, .	–	1	–	–
	Brockton, . .	1	–	–	–
	Fitchburg, . .	–	–	1	–
	Chelsea, . .	–	–	1	–
	Brookline, . .	1	–	–	–
	Chicopee, . .	–	–	1	–
	North Adams, .	1	–	–	–
Influenza, . . .	Boston, . .	1[1]	–[1]	–[1]	1[1]
		1[2]	–[2]	–[2]	1[2]
	Cambridge, .	1	–	–	–
	Brockton, . .	1	–	–	–
	Fitchburg, . .	–	–	–	1
	Taunton, . .	1	–	1	–
	North Adams, .	–	1	–	–
	Beverly, . .	–	1	–	–
Puerperal fever, . .	Boston, . .	1[1]	–[1]	2[1]	–[1]
		1[2]	–[2]	2[2]	–[2]
	Fall River, . .	2	1	–	–
	Lowell, . .	–	–	–	1
Meningitis (other than cerebro-spinal).	Watertown, .	1	–	–	–

[1] Nonresidents deducted. [2] Total deaths.

REPORT ON INSPECTION OF FOOD AND DRUGS.

Laboratory Examinations of Food and Drugs.

The following summary presents the results of the laboratory examinations during the month of February, 1913, of samples of food and drugs collected by inspectors of the Board: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Bread,	1	–	1	Lard,	3	–	3
Cake frosting,	1	–	1	Maple sugar,	5	–	5
Cocoa,	3	–	3	Maple syrup,	4	–	4
Coffee,	–	3	3	Meat products: —			
Confectionery,	2	–	2	Canned meats,	1	–	1
Cream,	9	–	9	Mince meat,	1	–	1
Cream of tartar,	2	–	2	Sausages,	–	2	2
Drugs,	126	22	148	Milk,	250	70	320
Eggs,	4	3	7	Oysters,	7	–	7
Flavoring extracts: —				Pickles,	4	–	4
				Shrimp,	2	–	2
Lemon,	1	2	3	Spices,	7	–	7
Maple,	1	–	1	Syrup,	1	–	1
Vanilla,	3	–	3	Table sauce,	–	1	1
Wintergreen,	1	–	1	Vinegar,	7	9	16
Honey,	1	–	1				
Jams and jellies,	26	–	26	Total,	473	112	585

The samples of drugs found to be adulterated were alcohol, quinine pills, spirit of nitrous ether, spirit of camphor, spirit of lemon, spirit of peppermint and tincture of iodine.

The cities and towns in which samples were collected were: Boston, Brookline, Cambridge, Carlisle, Concord, Everett, Fall River, Gardner, Haverhill, Lawrence, Lowell, Lynn, Malden, Medfield, Medford, Needham, New Bedford, North Attleborough, Rockland, Salem, Somerville, Framingham, Stow, Sudbury, Swampscott, Taunton, Uxbridge, Webster, Westborough, Westford, Weymouth, Whitman, Winchester, Worcester.

Prosecutions for Violations of the Law relating to Food and Drugs.

Thirteen convictions were secured during the month of February, 1913, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Walter D. Carter, . .	Wilmington, .	Milk (total solids, 11.40.).[1]
2	Walter D. Carter, . .	Wilmington, .	Milk (total solids, 11.70).[1]
3	Charles Holmes, . .	Wilmington, .	Milk (total solids, 9.56).[1]
4	Standard Egg Company, .	Boston, . .	Broken eggs (decomposed).[2]
5	Standard Egg Company, .	Boston, . .	Broken eggs (decomposed).[2]
6	White Star Egg and Fruit Company, . . .	Boston, . .	Broken eggs (decomposed).[2]
7	White Star Egg and Fruit Company, . . .	Boston, . .	Broken eggs (decomposed).[2]
8	Morris Brown, . . .	Boston, . .	Broken eggs (decomposed).[2]
9	Bay State Egg Company, .	Boston, . .	Broken eggs (decomposed).[2]
10	James W. Hession, . .	Boston, . .	Cider (compound of benzoic acid).[2]
11	Eugene Sullivan, . .	Lawrence, .	Milk (total solids, 9.66.).[1]
12	Avidis Dagdigin, . .	Methuen, .	Milk (total solids, 10.92).[1]
13	Cyrus Davies, . . .	Boston, . .	Spirit of peppermint (12 per cent. U. S. P.).

[1] Watered. [2] Appealed.

Fines imposed, $350.

List of Adulterated or Improperly Labeled Foods.

The following shows the adulterated or improperly labeled foods, during the month of February, 1913: —

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
19415	Armour's Tomato Bouillon.	Armour & Co., Chicago, Ill.,	Preserved with benzoic acid.
q 10558	Spirit of camphor,	Ray F. Webster, Lowell, Mass.,	75 per cent. of required strength.
q 10559	Tincture of iodine,	Ray F. Webster, Lowell, Mass.,	75 per cent. of required strength.
q 10586	Tincture of iodine,	T. A. Duprey & Co., Lowell, Mass.,	64 per cent. of required strength.
19237	Spirit of nitrous ether,	Hubbell & McGowan, Boston, Mass.,	42 per cent. of required strength.
q 10521	Spirit of peppermint,	Cyrus Davies, Boston, Mass.,	12 per cent. of required strength.
19109	Milk,	Avidis B. Dagdigin, Methuen, Mass.,	Total solids, 11.30 per cent.; fat, 3.30 per cent.; contained added water.
19110	Milk,	Avidis B. Dagdigin, Methuen, Mass.,	Total solids, 11.66 per cent.; fat, 3.60 per cent.; contained added water.
19111	Milk,	Avidis B. Dagdigin, Methuen, Mass.,	Total solids, 11.18 per cent.; fat, 3.45 per cent.; contained added water.
19112	Milk,	Avidis B. Dagdigin, Methuen, Mass.,	Total solids, 11.70 per cent.; fat, 3.70 per cent.; contained added water.
19113	Milk,	Avidis B. Dagdigin, Methuen, Mass.,	Total solids, 11.62 per cent.; fat, 3.80 per cent.; contained added water.
19114	Milk,	Avidis B. Dagdigin, Methuen, Mass.,	Total solids, 11.78 per cent.; fat, 3.85 per cent.; contained added water.
19115	Milk,	Avidis B. Dagdigin, Methuen, Mass.,	Total solids, 11.26 per cent.; fat, 3.20 per cent.; contained added water.
19116	Milk,	Avidis B. Dagdigin, Methuen, Mass.,	Total solids, 10.92 per cent.; fat, 3.00 per cent.; contained added water.
19117	Milk,	Avidis B. Dagdigin, Methuen, Mass.,	Total solids, 11.00 per cent.; fat, 3.05 per cent.; contained added water.
19118	Milk,	Avidis B. Dagdigin, Methuen, Mass.,	Total solids, 11.82 per cent.; fat, 3.90 per cent.; contained added water.

2085–S	Milk,	Lewellyn F. Gates, Westford, Mass.,	Total solids, 10.70 per cent.; fat, 3.30 per cent.; contained added water.
2087–S			Total solids, 10.90 per cent.; fat, 3.40 per cent.; contained added water.
2089–S			Total solids, 10.50 per cent.; fat, 3.30 per cent.; contained added water.
2091–S			Total solids, 11.06 per cent.; fat, 3.30 per cent.; contained added water.
2093–S			Total solids, 10.74 per cent.; fat, 3.20 per cent.; contained added water.
2095–S			Total solids, 10.90 per cent.; fat, 3.20 per cent.; contained added water.
2097–S			Total solids, 10.96 per cent.; fat, 3.50 per cent.; contained added water.
2099–S			Total solids, 10.18 per cent.; fat, 3.00 per cent.; contained added water.
2101–S			Total solids, 10.20 per cent.; fat, 3.30 per cent.; contained added water.
q 10456	Milk,	C. M. Young, Hingham, Mass.,	Total solids, 11.30 per cent.; fat, 3.50 per cent.; contained added water.
q 10634	Milk,	David Burgess, Westborough, Mass.,	Total solids, 10.06 per cent.; fat, 3.00 per cent.; contained added water.
q 10635			Total solids, 11.38 per cent.; fat, 3.80 per cent.; contained added water,
q 10636			Total solids, 9.78 per cent.; fat, 3.00 per cent.; contained added water.
q 10637			Total solids, 10.56 per cent.; fat, 3.35 per cent.; contained added water.

REPORT ON INSPECTION OF DAIRIES.

During the month of February, 1913, 247 dairies were examined in the following places: —

PLACE.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Essex,	13	11	84.62	2	15.38
Second inspection,	27	24	88.89	3	11.11
Third inspection,	5	4	80.00	1	20.00
Granby,	–	–	–	–	–
Third inspection,	1	–	–	1	100.00
Hardwick,	13	8	61.54	5	38.46
Second inspection,	41	33	80.49	8	19.51
Third inspection,	1	1	100.00	–	–
Norwood,	19	13	68.42	6	31.58
Second inspection,	18	10	55.56	8	44.44
Orleans,	2	2	100.00	–	–
Third inspection,	1	–	–	1	100.00
Paxton,	7	3	42.86	4	57.14
Second inspection,	18	6	33.33	12	66.67
Somerville,	3	3	100.00	–	–
Third inspection,	2	2	100.00	–	–
South Hadley,	–	–	–	–	–
Fourth inspection,	1	1	100.00	–	–
Upton,	7	2	28.57	5	71.43
Second inspection,	6	6	100.00	–	–
Ware,	20	18	90.00	2	10.00
Second inspection,	42	34	80.95	8	19.05

Total number of dairies examined,	247
Number found to be free from objectionable conditions,	181
Number concerning which letters were sent,	66
Total number of conditions to which attention was called,	231
Percentage of dairies which passed inspection,	73.28

In addition to the above, 70 dairies were visited at which the sale of milk had been discontinued.

Included in the total number of dairies visited were 84 which had recently started in the milk-producing business and were inspected for the first time.

The names of the owners of the dairies found to be worthy of commendation follow: —

Essex.

Class AA.

Prospect Hill Farm

Class B.

Andrews, Elias *
Andrews, F. F. ‡
Andrews, Leonard G.
Boyd, Frank A.
Burnham, Gardner * †
Cogswell, Caleb M.*
Dunn, William
Elm Farm Dairy ‡
Elwell, Louis
Elwell, Zeno, Jr.* †
Elwell, Zeno P.* †
Gaffney, William M.*
Gilbert, Noah
Gordon, George A.*
Hardy, Frank *
Haskel, Arthur ‡
Jenkins, Harold *
Knowlton, Charles L.*
Knowlton, Edward F.*
Low, James O.*
Low, Josiah *
Low, Lyman * †
Lucas, Fred W.‡
Lufkin, John E.
Mears, S. A.
Patch, Charles F.*
Perkins, Eben *
Perkins, George G.* †
Prest, John
Riggs, Albion
Story, Albert * †
Story Brothers * †
Story, H. H.*
Story, Leonard *
Stowe, Walter H.*
"Town Farm" * †
Watson, F. E.*

Hardwick.

Class A.

Mixter, Miss Mary A.* †
Wrin, Estate of Humphrey *

Class B.

Barnes, Willard H.* †
Belfance, Augustus *
Berry, F. J.
Breen, David
Breen, H. J. & Brother * †
Bryson, Andrew
Carroll, Patrick * †
Chagnon, Edmond *
Clark, Frank D.* †
Cleveland, Est. of Willard * †
Delargy, William
Dennis, J. G.* †
Fay, Mrs. John H.
Goodfield, Mrs. William * †
Hillman, J. N.* †
Hillman, J. S.* †
Hitchcock, F. A.* †
Jackson, W. A.‡ †
Kennedy, Daniel *
Lucier, Tuffel *
Macziulis, Joseph * †
Mahan, D. C.*
Newcomb, William A.* †
Newton, Stephen E.
Neylon, Michael J.*
Nimtz, Herman * †
Paige, Joseph C.*
Plant, Joseph E.* †
Prouty, Henry M.*
Robinson, W. A.* †
Rominisky, Joseph * †
Ruggles, Louis H.* †
Ruggles, N. Paul * †
Senkewcz, Sylvester
Thresher, Howard
Tuttle, O. A.* †
Vinskis, Andrew *
Walsh, Timothy *
Wheelock, Albert * †

Norwood.

Class B.

Conley, Mark
Connelly, Stephen
Cottle, George R.* †
Curran, Andrew
Curran, John
Curran, Peter
Dean, Albert *
Dean, Eben W.
Donahue, Michael
Ellis, David A.
Fales, Albert *
Fales, F. A.*
Feeney, Daniel
Feeney, Daniel (2d)
Fisher, Fred L.* †
Foley, D.
Hawes, George *
Hoar, Clarence D.*
Lydon, Martin
Mahoney, Thomas U.*
McDonough, Coleman
Scherer, J. A.* †
Talbot, Edward E.* †

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* Second inspection.
‡ Third inspection.
† Reported favorably on first inspection.

Orleans.

Class B.

Cole, Everett A.
Snow, Freeman E.

Paxton.

Class A.

Richards, E. G.* †

Class B.

Barclay, Joseph A.
Blaisdell, W. A.*
Carlson, Ludwig
Matthews, E. J.
Parkhurst, Clifton *
Pike, H. H.*
Rossier, G. A.*
Wood, W. J.* †

Somerville.

Class B.

Fallen, John J.
Hunt, Mrs. Ellen J.‡ ||
Monahan, E. M.‡
Shiner, A. F.
Smith, W. H.

South Hadley.

Class B.

Brockway, Horace T. § ||

Upton.

Class B.

Barton, Alexander
Curtis, Harold M.
Knowlton & Sons * †
Potter, C. T.*
Sadler, H. S.* †
Sadler, Walter *
"Town Farm" * †
Wood, M.*

Ware.

Class B.

Anderson, William *
Andrews, F. E.*
Babcock, Barnard C.*
Ballou, A. H.*
Bohmiller, Frank *
Bousquet, Homer *
Brown, George F.*
Buffington, F. D.*
Campbell, Mrs. John P.* †
Castledine, Joseph
Cebula, Albert
Collette, T.* †
Collette, William
Cummings, J. Warren *
Doane, Frank H.*
Dugan, Dominick *
Gilbert, Charles
Gould, John A.*
Green, Herbert * †
Grese, Mrs. Joseph B.*
Griffin, M. D.* †
Harper Brothers *
Harwood, Frank W.*
Irwin, James *
Johnson, Frederick A.*
Kelcey, Edward
Kilmer, Arthur
Kobisz, Ignacy
Lazelle, E. T.
Lubelczyk, John
Malboeuf, John
McManus, Patrick J.*
Menard, Francis *
Moore, Charles *
Moore, E. E.* †
Moriarty, John
Peck, George * †
Pilch, Mrs. Annie
Prindiville, Michael *
Quinn, Mrs. May Gould *
Remeter, Ernestine
Rich, John *
Sheahey, James * †
Sloat, Peter C.* †
Smith, John * †
Stearns, John
Sullivan, Eugene
"Town Farm"
Tucker, Harry * †
Urban, John
Walker, C. H.
Wheeler, G. O.* †

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

TYPHOID FEVER IN MASSACHUSETTS.

Preliminary Report to the Massachusetts State Board of Health of a Special Committee composed of Harry Linenthal, M.D., Charles E. Simpson, M.D., William W. Walcott, M.D. and Lyman Asa Jones, M.D.

The discovery of the typhoid bacillus and the knowledge of its mode of entrance into and its exit from the body has led to the recognition that typhoid fever is a preventable disease.

In theory, at least, it is possible to eradicate this disease completely, through the protection from contamination of all food and water supplies, in whatever manner, and through the destruction of all typhoid germs excreted from the body.

In practice such an attainment appears to be out of the question at the present time. Marked success, however, has followed preventive efforts, especially in certain cities of northern Europe, as shown in the following table: —

Average Typhoid Death Rate per 100,000.

	1890-94.	1906-09.	1910.
Berlin,	10.34	4.09	3.6
Hamburg,	21.65	3.40	2.5
Vienna,	6.96	3.66	4.1
Paris,	25.34	9.69	6.7
London,	13.43	4.32	4.0

During 1909 and 1910 other European cities show equally low or lower death rates from typhoid fever. While some of the cities mentioned below reduced their typhoid mortality rate to 0.9, 2.1 and 2.3 per 100,000, it is evident from this and the preceding table that many localities have reduced the average mortality from this disease to about 4 per 100,000.

The following figures, compiled by McLaughlin from the public health reports, are quoted from the Hygienic Laboratory Bulletin, No. 63, March, 1912, page 16: —

Typhoid Death Rate for 1909 and 1910 per 100,000 Population.

	1909.	1910.
Frankfort,	1.5	0.9
Antwerp,	1.0	2.3
Bristol,	2.8	2.1
Birmingham,	5.0	3.9
Belfast,	5.2	3.9
Leeds,	7.2	3.8
Amsterdam,	3.8	6.7
Bradford,	4.3	9.2
Liverpool,	8.4	3.9

In comparison the showing for this country is far from flattering. The registration area of the United States, with a population exceeding 53,000,000, or 58.3 per cent. of the whole, had an average mortality rate of 29.5 per 100,000 for the years 1901 to 1909, inclusive, — more than six times the 1910 rate for the European cities mentioned.

Though our own rate is decreasing, as seen by the rates for the past five years, the mortality rate for the registration area in 1910 was five times higher than the average rate for the European cities.

Typhoid Mortality per 100,000, Registration Area of the United States, 1906–10.

1906,	31.3
1907,	29.5
1908,	24.3
1909,	21.1
1910,	23.5

In 1910 the registration area of the United States included 21 States. Not one of these States had a rate as low as 10 per 100,000. Eight States had a rate less than 20, ranging from 10.7 to 19.2 per 100,000, while in the remaining 13 States the typhoid mortality rate varied from 20.3 to 57.5 in one of the southern States, where the figures were limited to municipalities with a population of 1,000 or more.

The result is equally unfavorable in making a comparison with the cities of this country. Of the 50 registration cities of the United States, with a population of 100,000 or over, in 1910, but 4 had a typhoid mortality rate of 9.5 per 100,000 or less.

Twenty-two cities had rates ranging from 11.3 to 19.5; 12 cities had rates ranging from 20.4 to 28.5; the rates in 3 cities varied from 31.5 to 37.2, while in 9 cities the rates exceeded 40 per 100,000.

Typhoid Mortality Rates of Cities of 100,000 or Over in Registration Area, 1910, by Groups.

Number of Cities.	Mortality Rate per 100,000.
4	9.5 or less.
22	11.3–19.5
12	20.4–28.5
3	31.5–37.2
9	42.0–86.7

Average rate, 1910, 25.

For years the efforts made in Massachusetts to reduce the amount of typhoid fever have been effective, as the steadily diminishing mortality from the disease will show.

Death Rate per 100,000 from Typhoid Fever in Massachusetts by Five-year Periods.

1883–87,	43.5
1888–92,	38.6
1893–97,	28.1
1898–1902,	21.4
1903–07,	15.8
1908–10 (three years),	13.6

Compared with the low average rate in European cities already given, the lowest of these rates is nearly three and a half times higher.

The average typhoid death rate per 100,000 for Massachusetts cities and towns for the four years 1908–11, inclusive, is given in the following table, from which it appears that in 15 cities the rate exceeds the average rate for the State, while there are but 13 cities where the rate is as low or approximates the average record of the European cities: —

City.	Population.	Total Deaths.	Rate per 100,000.	Rank.
Chicopee,	25,401	2	1.97	1
Medford,	23,150	2	2.16	2
Gloucester,	24,398	4	4.10	3
Newton,	39,806	9	5.65	4
Salem,	43,697	11	6.29	5
Everett,	33,484	9	6.72	6
Northampton,	19,431	6	7.72	7
Cambridge,	104,839	34	8.39	8
Quincy,	32,642	11	8.42	9
Melrose,	15,715	6	9.55	10
Brockton,	56,878	22	9.67	11
Somerville,	77,236	30	9.71	12
Worcester,	145,986	58	9.93	13
Malden,	44,404	19	10.70	14
Holyoke,	57,730	26	11.26	15
Haverhill,	44,115	25	11.33	16
Woburn,	15,308	7	11.43	17
Marlborough,	14,597	7	12.00	18
Chelsea,	32,642	17	13.10	19
Lowell,	96,652	57	13.41	20
Boston,	686,092	385	14.35	21
Waltham,	27,834	16	14.37	22
Lynn,	89,336	52	14.55	23
Fall River,	119,295	72	15.09	24
Fitchburg,	37,826	24	15.86	25
Lawrence,	85,892	62	18.05	26
Springfield,	88,926	66	18.55	27
Beverly,	18,650	14	18.77	28
Pittsfield,	32,121	26	20.24	29
North Adams,	22,019	19	21.57	30
New Bedford,	96,652	84	21.73	31
Taunton,	34,259	31	22.62	32
Newburyport,	14,949	23	38.46	33

Town.	Population.	Total Deaths.	Rate per 100,000.	Rank.
Amesbury,	9,894	1	2.53	1
Montague,	6,866	1	3.64	2
Maynard,	6,390	1	3.91	3
Reading,	5,818	1	4.30	4
Webster,	11,509	2	4.34	5
Belmont,	5,542	1	4.51	6
North Andover,	5,529	1	4.52	7
Westborough,	5,446	1	4.59	8
Wellesley,	5,413	1	4.62	9
Mansfield,	5,183	1	4.82	10
Hingham,	4,965	1	5.04	11
Millbury,	4,740	1	5.27	12
Uxbridge,	4,671	1	5.35	13
West Springfield,	9,224	2	5.42	14
Revere,	18,219	4	5.49	15
Ware,	8,744	2	5.72	16
Milford,	13,055	3	5.74	17
Adams,	13,026	3	5.76	18
Randolph,	4,301	1	5.81	19
Dudley,	4,267	1	5.86	20
Easthampton,	8,524	2	5.87	21
Lee,	4,106	1	6.09	22
Middleborough,	8,214	2	6.09	22
Milton,	7,924	2	6.31	23
Tewksbury,	3,750	1	6.67	24

Town.	Population.	Total Deaths.	Rate per 100,000.	Rank.
Hardwick,	3,524	1	7.09	25
Greenfield,	10,427	3	7.19	26
Brookline,	27,792	8	7.20	27
Dracut,	3,461	1	7.22	28
Winthrop,	10,132	3	7.40	29
Spencer,	6,740	2	7.42	30
Leicester,	3,237	1	7.72	31
Weymouth,	12,895	4	7.76	32
Watertown,	12,875	4	7.77	33
North Attleborough,	9,562	3	7.84	34
Stoughton,	6,316	2	7.92	35
Falmouth,	3,144	1	7.95	36
North Brookfield,	3,075	1	8.13	37
Lenox,	3,060	1	8.17	38
Great Barrington,	5,926	2	8.44	39
Northbridge,	8,807	3	8.52	40
Westport,	2,928	1	8.54	41
Somerset,	2,798	1	8.93	42
Abington,	5,455	2	9.17	43
Saugus,	8,047	3	9.32	44
Norwood,	8,014	3	9.36	45
Fairhaven,	5,122	2	9.76	46
Amherst,	5,112	2	9.78	47
Leominster,	17,580	7	9.95	48
South Hadley,	4,894	2	10.22	49
Marblehead,	7,338	3	10.22	49
Walpole,	4,892	2	10.22	49
Andover,	7,301	3	10.27	50
Auburn,	2,420	1	10.33	51
Wilbraham,	2,332	1	10.72	52
Methuen,	11,448	5	10.92	53
Groveland,	2,253	1	11.10	54
Arlington,	11,187	5	11.18	55
Dighton,	2,235	1	11.19	56
Brookfield,	2,204	1	11.34	57
Clinton,	13,075	6	11.47	58
Palmer,	8,610	4	11.61	59
Holden,	2,147	1	11.64	60
Athol,	8,536	4	11.72	61
Ashburnham,	2,107	1	11.86	62
Rockport,	4,211	2	11.87	63
Gardner,	14,699	7	11.91	64
Warren,	4,188	2	11.94	65
Upton,	2,071	1	12.07	66
Wareham,	4,102	2	12.19	67
Braintree,	8,066	4	12.40	68
Avon,	2,013	1	12.42	69
Rehoboth,	2,001	1	12.49	70
Grafton,	5,705	3	13.15	71
Templeton,	3,756	2	13.31	72
Hanson,	1,854	1	13.48	73
Hamilton,	1,749	1	14.29	74
Southborough,	1,745	1	14.33	75
Plymouth,	12,141	7	14.41	76
Rockland,	6,928	4	14.43	77
Duxbury,	1,688	1	14.81	78
Ashland,	1,682	1	14.86	79
Carver,	1,663	1	15.03	80
Salisbury,	1,658	1	15.08	81
Natick,	9,866	6	15.20	82
Northfield,	1,642	1	15.23	83
Wakefield,	11,404	7	15.35	84
Westfield,	16,044	10	15.58	85
Peabody,	15,721	10	15.90	86
Huntington,	1,473	1	16.97	87
Dartmouth,	4,378	3	17.13	88

Town.	Population.	Total Deaths.	Rate per 100,000.	Rank.
Provincetown,	4,369	3	17.17	89
Westminster,	1,353	1	18.48	90
Cohasset,	2,585	2	19.34	91
Southbridge,	12,592	10	19.85	92
Attleborough,	6,215	5	20.11	93
Scituate,	2,482	2	20.15	94
Littleton,	1,229	1	20.34	95
Monson,	4,758	4	21.02	96
Ipswich,	5,777	5	21.64	97
Medfield,	3,466	3	21.64	97
Winchendon,	5,678	5	22.01	98
East Bridgewater,	3,363	3	22.30	99
Oxford,	3,361	3	22.31	100
West Bridgewater,	2,231	2	22.41	101
Wayland,	2,206	2	22.67	102
Bridgewater,	7,688	7	22.76	103
Framingham,	12,948	12	23.17	104
North Reading,	1,059	1	23.61	105
Hyde Park,	15,507	15	24.18	106
Chelmsford,	5,010	10	24.95	107
Ludlow,	4,948	5	25.26	108
Ashfield,	959	1	26.07	109
Becket,	959	1	26.07	109
Berlin,	904	1	27.65	110
Whately,	846	1	29.55	111
Tyngsborough,	829	1	30.16	112
Princeton,	818	1	30.56	113
Danvers,	9,407	12	31.89	114
West Newbury,	1,473	2	33.94	115
Harwich,	2,115	3	35.46	116
Norwell,	1,410	2	35.46	116
Pembroke,	1,336	2	37.43	117
Cummington,	637	1	39.25	118
Egremont,	605	1	41.32	119
Clarksburg,	1,207	2	41.43	120
Tisbury,	1,196	2	41.81	121
Halifax,	550	1	45.45	122
Savoy,	503	1	49.70	123
Otis,	494	1	50.61	124
Russell,	965	2	51.81	125
Pelham,	467	1	53.53	126
West Tisbury,	437	1	57.21	127
New Marlborough,	1,124	3	66.73	128
Wales,	345	1	72.46	129
Alford,	275	1	90.91	130
Florida,	359	2	139.28	131

It is conservatively estimated that there are 8 cases of typhoid fever for each death from this disease, though the proportion may be greater or less in individual outbreaks. Assuming this proportion as correct, *there are in Massachusetts each year over 70 cases of typhoid fever per 100,000 of population, equivalent to nearly 2,500 cases annually over and above the present rate in the European cities previously mentioned.* These cases are surely possible of prevention.

In view of the fact that typhoid fever is a preventable disease, and that its occurrence in the State as a whole is so pronounced, causing many unnecessary deaths, it is astonishing to find how many difficulties at present exist, when it comes to the matter of prevention.

I. Difficulties having to do with General Conditions.

A. Public Indifference.

Perhaps the greatest obstacle of all is the indifference not only of the general public, but even of health authorities and physicians. Typhoid fever has been present so commonly year after year that it has come to be considered as a regular, almost a natural, feature of the life of the community. Through vaccination smallpox has been so far prevented that few people, including physicians, have ever seen a case. If a case is discovered, the disease occasions consternation, and the community submits to rigid regulations to prevent its spread. But the same community manifests comparatively little fear or uneasiness because of typhoid fever in its midst, even though, in individual years, the typhoid cases number a hundred for every case of smallpox.

B. Efficiency of Local Health Boards.

While many local boards of health are carrying on active campaigns with excellent results, other local authorities, more numerous, are handicapped, partly because they do not appreciate the importance of public health work, and partly because they do not know how to proceed, even though they may have every desire to do so. To a considerable extent this is the outgrowth of the system under which they are appointed.

In cities, under their charters, the members of the board of health are usually appointed by the mayor. In consequence it happens not infrequently that the membership of the board changes entirely when there is a change in the local administration, the new mayor appointing to the health board his personal friends or supporters. The new appointees may be entirely unfamiliar with health work; indeed, they may not even be interested in it.

Such course of action does not tend to secure an even and progressive administration of health laws.

In towns the law provides that one member of the board of health shall be elected annually to serve for a period of three years; in towns with a population of 5,000 or over it provides that one member shall be a physician. Were this latter practice universal much better health work would result.

Even under such circumstances difficulties arise. For example, two years ago Ipswich (population, 5,777) had an outbreak of typhoid fever, confined to the mill section, the thickly populated portion of the town. Following this outbreak the mill authorities established and carried out a rigid sanitary code, with the result that they have had no case of typhoid fever in that section of the town since.

The agent of the mill corporation, furthermore, and the medical member of the board of health became much interested in the sewage disposal of the town, and with the idea of making typhoid outbreaks less likely in the future, advised the town to establish a sewer system for the thickly settled portion. The scattered farming portion of the population were thereby greatly incensed, however, and at the following election chose a layman in the physician's place, leaving no physician on the board.

The situation thus brought about being contrary to the law, the matter was referred to the courts, whereupon the physician was declared elected, since he had received the highest number of votes cast for a physician, and under the law a physician had to be chosen. Such an experience in health administration, however, is calculated to discourage even a strong official.

In towns where no health board is elected the law provides that the selectmen shall serve as a board of health. As a rule, the selectmen are elected annually for a period of one year, so that there is frequently a complete change of officials from one year to another. The selectmen, moreover, are more or less engrossed in the general affairs of the town, and oftentimes, desiring re-election, are slow to push health measures, even in the presence of an emergency, because such measures may involve inconvenience to voters whom they prefer not to antagonize. Even if they are interested and do try to accomplish something, they may be retired from office at the next election, and it then becomes necessary to begin all over again. Such possibility of change interferes seriously with any permanent health administration or policy, especially with any plan looking to joint action by adjoining or neighboring towns and municipalities.

C. Insufficient Funds.

Another obstacle to the carrying on properly of health work is the lack of sufficient funds. This lack grows out of the popular and official ignorance as to the value of health work already mentioned.

The idea has prevailed that the board of health existed merely to supply the means for the paying of political or other debts; that its work (which is too often the case) amounted to nothing; that there was little or nothing of importance for it to do, and that, in consequence, there was no real need for funds. Appropriations and salaries are always small; indeed, in many localities there is no appropriation whatever for health work. Bills incurred for health purposes are paid from the contingent or general funds after the selectmen or other officials have passed upon the necessity for the expenditure. Under the circumstances the wonder is not that so little has been accomplished, but that so much good work has been done.

To secure better results there must be greater permanency in health departments. Interested and competent officials are needed, and when secured their tenure of office should continue during their efficiency. They should be paid adequately. The public should be taught that ample funds are necessary for the carrying on of health work, and that, although much less spectacular, there is much more virtue in *preventing illness* than in merely overseeing an epidemic after it has occurred.

D. Summer Colonies.

Within the last few years interest in country life and out-of-door recreation, especially during the warm season, has led to the establishment of numerous pleasure parks, summer colonies, and other places where out-of-door living may be enjoyed. Within the State many such places have sprung up rapidly, and often dwellings are thickly crowded. The majority of these localities are without water supply other than the well, or means of sewage disposal other than the common privy.

In the absence of all sanitary regulation or supervision, the dangers from typhoid fever are great, there being many opportunities for the spread of the disease when once the infection is introduced. This criticism applies, also, to the many construction camps maintained in connection with steam and electric railway and power development during the past few years.

There is urgent need for State-wide sanitary regulation of such summer colonies and construction camps.

II. Difficulties having to do with the Agencies through which the Infection is spread.

The original source of typhoid infection is the infected individual himself, and the typhoid germs in his excretions. The manner in which the infection is conveyed to others varies greatly. In the great majority of instances typhoid infection gains entrance into the individual through the alimentary canal, the specific organisms being carried by polluted water, food or other means to the mouth. This pollution becomes possible only because, in some way, typhoidal excretions have not been thoroughly disinfected. A further consideration of the agencies through which the infection reaches the individual will disclose additional factors involved in any campaign for the prevention of typhoid fever.

A. Infection of the Water Supply.

A water supply may become infected in various ways. Sewage emptying into a lake or pond to be used as a public water supply may spread infection among the takers of the water, even though the case of typhoid

fever be located at an isolated country house on the bank of some small feeder or tributary, the privy being placed possibly over the brook or so located that its contents are washed into the stream with the rain or melting snow. A well or a clear flowing spring may receive the leachings from a stable yard or privy located in close proximity.

A few examples may be cited: —

1. Infection of a public water supply from overhanging privies is very strikingly shown by the experience of Lowell and Lawrence in 1890–91. In Lowell there occurred probably over 1,000 cases of typhoid fever, while a little later there was an extensive outbreak in Lawrence, which is located nine miles farther down the Merrimac River, both cities obtaining their public water supply directly from the river.

In Lowell the infection was traced to several cases of typhoid fever in North Chelmsford, where the privies concerned overhung Stony Brook, a tributary of the Merrimac River, at a point above the location where the city of Lowell obtained its public supply. In Lawrence the public water supply was further polluted by the sewage of the city of Lowell.

2. The accidental infection of a public water supply is illustrated by the outbreak in 1904 at Millinocket, Me., at the headwaters of the Penobscot River. Valves were installed through which river water could be pumped to supplement the public supply in case of fire. Following such pumping, when the valves failed to act, some 200 cases of typhoid fever occurred, and later still some 600 cases of the disease occurred in Bangor and vicinity, places where the Penobscot River furnished the source of public water supply.

3. Typhoid discharges from a single patient thrown on the frozen ground and washed into the public supply with the spring thaws gave rise in 1885 to 1,100 cases of the disease at Plymouth, Pa., in a total population of but 8,000.

B. Infection of the Milk Supply.

Milk itself as it comes from the cow is free from typhoid infection. But because of its extensive use as food, because of its unusual qualities as a culture medium, and the many hands through which it passes to reach the consumer, it is one of the chief agents through which typhoid fever is spread. It may become infected through washing the cans and utensils in polluted water. If containers are left in households where the disease exists, they may bring back infection when returned to the dairy. Milk and its containers when exposed may be infected by flies which have been in contact with a typhoid patient or his excretions.

At this point attention is directed to the possible contamination of

milk through the interchange of milk bottles at homes where typhoid fever is present. It is more or less customary to forbid the leaving of bottled milk at such times. When sickness exists in a household the source of milk supply is often changed, and in the absence of some placard, which is seldom used for typhoid fever, there is no certainty that the new milkman is warned as to the nature of the illness. Furthermore, the exchange of milk bottles is usually resumed with the return of convalescence, at which time a small proportion of the patients are still discharging typhoid bacilli.

A further source of danger in this connection lies in the fact that, among certain classes in the community, bottled milk or cream is purchased from grocery stores, to which the bottles are returned when empty. The grocer has no means of knowing whether illness exists in the family, and may not even know the purchaser's name.

Though definite proof is not available, it is highly probable that typhoid infection is sometimes carried in this manner, especially if bottles from infected homes are returned to small dealers who have no means of sterilizing them before they are refilled.

To avoid the possibility of spreading typhoid infection in this way, there is need of some definite system for placarding cases. Provision should be made, moreover, for requiring stools and urine to be free from typhoid bacilli, before the removal of the placard, in the same manner that negative throat cultures are required prior to the release of diphtheria patients. This necessity would apply especially to those who handle food. Local health authorities should also try in every way to prevent the use of milk and cream bottles in homes where diseases such as diphtheria, scarlet fever and typhoid fever are present.

One or two illustrations of typhoid infection caused by milk may be mentioned. The importance of undetected typhoid carrier cases is also emphasized: —

1. Two cases of typhoid fever occurred in Lowell in 1910 on the route of a certain milkman early in September. The dairy was immediately investigated, and from the 13 employees Widal tests were taken, of which 12 were negative. The thirteenth test was atypical. Since nothing was found here to explain satisfactorily the cases, further investigations were made at other dairies from which the milkman secured milk, and at one place the dairyman, ill with typhoid fever, had just been removed to the hospital. The milk had been infected by this man in the handling, and this was the source of the infection in the cases reported. Later positive Widals were obtained from the thirteenth man at the milkman's dairy, and this same man was shown to be harboring typhoid bacilli for a period of seven weeks, though he himself had never had the dis-

ease, nor was he ill during the period in question. But for this investigation the carrier would not have been discovered.

Though this investigation was undertaken promptly, and the sale of milk from this source was forbidden when but 6 cases had been reported, there were 94 additional cases reported during the remainder of the month, 53 of which were attributed directly to this source.

2. Milk handled by a table maid who was coming down with the disease infected 60 people who spent Labor Day at a country hotel in Worcester County in 1909.

C. Infection of Other Food Supplies.

1. Lettuce, celery and other vegetables, used without cooking, and taken from gardens where sewage or night soil is used for fertilizer, have spread typhoid infection.

In 1889, celery from a garden fertilized with sediment from a sewage filter bed was supposed to have infected 63 persons in one of the Massachusetts State insane hospitals. The discharges from one, perhaps two typhoid cases, unrecognized, had gone to the filter bed without disinfection. Subsequently, when the filter bed was cleaned, a portion of the sludge was used on the celery beds.

2. Baker's products, handled by employees who are carriers, or who are coming down with the disease, have carried infection to those who used the products in question.

In 1909, in North Adams, through the use of baker's products, 6 persons contracted typhoid fever. The infection was traced to two unreported typhoid cases in an adjoining town. Both, a baker and a driver, were employees of the bakery and both continued at work for some time after the onset of their illness.

3. Shell fish, oysters, clams, etc., taken from or stored in sewage-polluted waters near sewer outlets, have caused typhoid infection.

Oysters eaten raw at banquets resulted in the illness of 127 persons, of whom 21 developed unmistakable typhoid, at Winchester and Southampton, Eng., in 1902. The oysters at both banquets came from the same dealer, and were obtained from an oyster bed so located that the oysters were contaminated by sewage from the main sewer outlet serving a community where typhoid fever had been present for some time.

D. Infection through Flies.

Infection may be carried by flies in contact with typhoid patients and their discharges. This is especially the case in localities where unscreened privies and vaults are in use, or where there are no such conveniences.

E. Infection through Contact.

Contact infection is also a very important factor in the spread of the disease. By contact infection is meant actual personal contact or touch with the patient, as in caring for and nursing such cases, or contact through handling utensils or articles used by him, or infection through food or objects in the household which have been in contact with the patient, such as bed linen, towels, dishes, milk bottles, etc.

To be considered as contact infection, infection through the handling of infected objects as just suggested should be more or less immediate in point of time. A mother caring for the patient may later through failure to observe proper precautions, prepare with infected hands food for other members of the family, and thus spread infection to herself or them. Physicians and nurses are often infected through contact.

By far the largest percentage of contact infection occurs during the incubation period, when the presence of the disease is least suspected and when the fewest precautions are observed, and during the first three weeks of the sickness.

F. Infection through Carriers.

Of recent years another source of infection has been recognized, one which readily explains many cases hitherto impossible to account for satisfactorily. It has been found that certain persons, called carriers, harbor typhoid bacilli and discharge them through the urine and feces. The elimination of bacilli is not constant, but intervals of varying length occur when the stools and urine are free from the germs. Repeated examinations are, therefore, often necessary to demonstrate that a carrier is no longer a source of danger.

For convenience carriers have been divided into two classes: the transitory, when the bacilli are found for a period of less than three months, and the chronic, when they are found for a longer period. The class of transitory carriers includes (*a*) persons during the incubation stage of the disease, (*b*) those clinically recovered, but who still eliminate bacilli in their excretions, and (*c*) healthy persons in contact with the infection. Chronic carriers include persons who have had the disease and healthy persons who have never had it.

Of 431 carrier cases discovered in southwestern Germany, where carrier cases have been especially studied, 211 were transitory and 220 were chronic carriers. Of the transitory, 43.6 per cent., and of the chronic, 80 per cent., had had typhoid fever. Three months was considered the limit for distinguishing between transitory and chronic carriers.

Several painstaking and careful investigations by different observers

have shown that over 11 per cent. of the cases investigated were eliminating bacilli for a period exceeding six weeks after the cessation of the fever.

Conservative judgment, based upon data available at the present time, indicates that 4 or 5 per cent. of the cases become carriers. It is not known how long a person may continue to be a carrier. Instances are recorded where the period is known to have extended over ten, twenty, thirty, even forty or more years.

This means that in Massachusetts alone there are from 120 to 150 carriers added to the population from year to year. The important significance of these facts is plain when we realize that typhoid bacillus carriers are liable at any time to be employed on dairy farms, in public places such as hotels or restaurants, or in homes as cooks and waitresses, or in other positions where their work involves the handling of food products.

In connection with the preparation of this report, several experiences with carrier infection have been encountered: —

1. One experience, occurring in Lowell, well illustrates the desirability of the early report of cases and the importance of early co-operation with the laboratory, since the source of infection was found and preventive measures were taken before the report of the cases had been received through the ordinary channels.

The State Health Inspector, happening to be in the Lowell laboratory on August 8, learned of three positive Widal tests taken on August 5, 7 and 8 from patients in North Chelmsford. By arrangement the three positive cases and two other doubtful cases in North Chelmsford were visited on Aug. 9. All five obtained milk from the same dairy. A visit showed the dairy to be rather dirty. Widal tests taken from all who were said to be connected with the dairy were negative. Being dissatisfied, the inspector made a second visit to the dairy on the morning of the 10th of August, and another employee was found who had recently come to the dairy. This man gave a positive Widal on August 11, though he himself was not ill, had never had typhoid fever, and could recall no illness since childhood. He probably was a carrier, as suitable preventive measures were taken, and no further cases resulted. All this preventive work, as stated above, had been accomplished before the usual reports had been received.

2. The second instance concerned a select apartment hotel in Brookline, where several employees of the food department became ill with typhoid fever. Investigation disclosed the fact that the general pantry man, who handled pastry and other food, was a carrier. This employee strenu-

ously denied that he had ever had typhoid fever, nor was he in any way ill at the time.

3. In North Adams, 1909, a chronic carrier was discovered, a woman who had had typhoid fever in an adjoining State fifteen years earlier. During a period of seven years, while milk was being sold from her dairy, she had unconsciously been responsible for 60 cases, through the occasional straining of the milk or the washing of the cans. The cases represented approximately one-fifth of all the typhoid fever in the community during the years in question, though less than one-hundredth part of the milk used in the city came from this dairy.

III. Other Difficulties.

A. Lack of Care as to Milk Bottles.

But 35 towns (no cities) placard for typhoid fever. The bearing of this fact upon the spread of infection through the exchange of milk bottles and the danger from the exchange of bottles at the grocer's has already been noted.

The use of milk bottles for other purposes than that for which they are intended is prohibited by law. It is no uncommon sight to see specimens of urine brought into a doctor's office in a milk bottle, and authentic instances have been reported of tuberculosis sputum being delivered for examination in a milk bottle. These bottles are thrown into the ash can and eventually find their way to the public dump.

One firm in this State makes a business of collecting stray bottles and returning them to their owners. During the past year nearly 2,500,000 bottles were handled by this exchange. Of this number 500,000 were picked up at various dumps. Many of these bottles were in an unspeakably filthy condition. After washing with warm water and soda these bottles are distributed to the various owners. Of the 325 milk dealers using this exchange, only a few of the larger ones have a sterilizing plant. In consequence these filthy bottles, recovered from public dumps, after one or two more or less careful washings, are refilled with milk and distributed to the public.

The use of such bottles should be prohibited unless thoroughly cleaned and sterilized.

B. Lack of Investigation of Cases.

Another difficulty in suppressing typhoid fever is that outside of some cities and a few of the larger towns there is little or no investigation of cases, no attempt to discover the source of infection and no record regarding previous cases beyond the list of cases reported, which might be used for studying the situation.

C. *Lack of Isolation of Cases.*

Responsible for very many secondary infections is the lack of proper isolation of typhoid cases and the entire absence of any supervision of isolation. This is plainly evident from the many instances in which second, third and fourth cases occur in a household. The majority of these cases could be avoided by proper isolation where such is possible, or by the removal of the patient to the hospital if proper isolation at home is impossible.

D. *Lack of Prompt Reporting of Cases.*

The late reporting of cases by householders (more frequently their entire failure to report) and physicians is another difficulty. It is not uncommon to find upon investigation that intervals of one, two or more weeks have intervened between the physician's first visit and his report of the case. During this interval, when the patient is especially liable to spread infection, no precautions, as a rule, have been taken.

If a physician waits to be sure of the diagnosis, every precaution should be taken during the period of waiting that would be called for were the diagnosis fully established. The fact that a suspicious case is under observation should be reported promptly.

E. *Lack of Instruction as to Disinfection.*

The frequent failure on the part of the local health authorities and the physicians to give specific instructions as to the disinfection of utensils, linen and excretions is often responsible for the further spread of the infection.

F. *Lack of Effort to follow up Carriers.*

Still another difficulty lies in the fact that there is at present practically no effort made to follow up convalescent patients and carriers, and especially those whose work involves the handling of food products, to determine when they may safely resume their regular duties.

Much work has already been done by the State Board of Health looking to the prevention of typhoid fever, especially along lines connected with securing and preserving the purity of public water supplies, and it is probable that much of the steady reduction of the typhoid mortality rate in the State during the past thirty years has been due to this work.

Under the present law all physicians and householders are required to report cases of typhoid (or other diseases dangerous to the public health) to the local board of health. The local board in turn is required to report such cases to the State Board of Health within the ensuing twenty-

four hours. For this purpose double post cards are supplied, one-half addressed to the State Board of Health, and the other, sent as a matter of courtesy, addressed to the health inspector of the district.

At the State House the cases are tabulated under each city or town as the reports are received, by days and months. Whenever the records show fresh cases in a community previously free from the disease, it is the custom to investigate in detail in order to determine the source of the infection.

At the present time the laboratory of the State Board of Health makes Widal tests and examinations of the stools, urine and blood for the typhoid organism for any physician free of charge. A pamphlet giving information about the management of typhoid cases is sent to every household where the disease is known to be present.

The preparation of material for antityphoid inoculation has been undertaken, and this material is now ready for distribution free, in the same manner as diphtheria antitoxin and smallpox vaccine.

Although every effort should be made to eradicate all sources of typhoid infection, this happy result is not immediately attainable, and the committee desires to call attention to the remarkable results following the use of antityphoid inoculation. During the past eleven months, since such inoculation has been carried out in the United States navy, there has not been a single case of typhoid fever among the 64,000 troops so protected. When 12,000 inoculated soldiers were mobilized along the Mexican border last year, not one case occurred, though camp conditions were very similar to those at the time of the Cuban war, when typhoid fever was exceedingly prevalent.

Similar success has followed the use of antityphoid inoculation in other armies, while in civil life evidence is accumulating to show the value of its use in protecting those exposed to infection.

For these reasons the committee urges the use of antityphoid inoculation. Its use by hospitals for the protection of nurses and all other employees is especially urged; and likewise the material may well be used to inoculate the remaining members of a household when the presence of the disease is first recognized or suspected.

What has been said concerning the difficulties encountered in the prevention of typhoid fever makes plainly evident the many factors entering into the problem. It shows unmistakably that the problem is far-reaching; that it is not confined to any one city or town; that no local board of health alone can solve the problem, though its own health conditions be perfect, because conditions beyond its borders may undo all that it has accomplished.

In short, the work can only be done by some central organization like

the State Board of Health, through its inspectors of health, co-operating with the local health authorities, and bringing up to a proper standard the health work in those communities as yet not sufficiently active or organized.

In regard to legislation, the committee is strongly of the opinion that it should cover the whole State. Otherwise health administration will vary much in different localities, and the careless community will still be a source of real danger to its neighbors.

A campaign against typhoid will of necessity be developed along a number of different lines, and must be continued over a considerable period of time if adequate results are to be obtained.

Knowledge of the distribution of the disease will be required. This has already been obtained through a study of the morbidity and mortality rates in the various cities and towns over a term of years. The committee has arranged to receive daily reports of cases as they occur throughout the State. An effort will be made, furthermore, to secure a detailed account of every case reported or discovered, using for the purpose the following blank: —

STATE BOARD OF HEALTH OF MASSACHUSETTS.

[Seal.]

Inquiry Blank.

Typhoid Fever in ....
(Name of city or town.)

Typhoid Fever Case No...........

In......................................., Since.................,........
(Name of city or town.) (Year.)

Date when case was reported to local board of health, ...
Date of physician's first visit,...
Date of first symptoms,...
Dates of Widal tests,...............................; Results,.......................
Name of attending physician,...
Residence, ...
Name of patient,...
Age,............, Sex,................, Nationality,.....................
Residence, ...
....
(If patient has moved during a period of two months ending with the date of sickness, please state
....
former and present residences and date or dates of removal.)
Number of members of household where patient resides, ...
Number of occupants who have had typhoid.........., When, ...
Previous cases in same house or in the same part of a double house or tenement block, ...
(Give
....
names of any persons ill with or dead from typhoid who were at any previous time residents
....
of the premises.

Newcomers, including servants in house, within 3 months prior, ...
Newcomers, including servants in house, had typhoid, ...
Dates of association with (*a*) typhoid patient, (*b*) suspected cases, ... (Consider neighbors, in-
....
cluding servants, visitors other than neighbors, fellow workmen, playmates, school children.)
Place of business, ...
(State all places of business occupied during two months ending with date of illness.)
Occupation, ...
(If changed during two months ending with date of illness, state changes, with dates of such changes.)
School or other public or private institution attended, ...
....
(During period of two months ending with date of illness.)
Trips out of town, ...
(Information should cover, with dates, all places visited during a period of at least two months
....
ending with date of illness.)
Conditions possibly giving rise to contact infection:
Condition of premises, ...
(Including location of and disposal of human excrement and sewage, garbage and water closets.)
General personal hygiene, ...
(Including conditions favoring contact infection such as unclean personal habits, failure to wash
....
hands after contact with secretions and excretions — putting fingers to mouth and nose, etc.)
....
Flies, ... Screens, ...
Treatment of stools and urine of patient, ...
(Were the stools disinfected? What methods were used? Urine?)
Sources of milk supply, in town, ...
(Give names of all dealers of whom milk has been obtained by
....
patient during the period of two months ending with date of illness.)
....
(Give names of stores and other places supplying milk to patient.)
Out of town, ...
Sources of water supply:
At home, ...
(State whether the public supply is used or water from private or semi-private wells, springs, etc.)
At school, ...
Out of town, ...
Ice supply:
Dealer or dealers, ...
Source or sources, ...
Remarks: [1]

[1] Remarks should embody all additional information which can be obtained relative to special or unusual conditions affecting this case.

From tabulations of the detailed information above suggested it will be possible to discover in what places typhoid fever is unusually prevalent, and opportunity will be given for special investigation in such places, especially as regards the water and sewerage systems, the character of the milk supplies and any other special factors. Much of this information is already recorded in different places. An effort will be made to collate the same and to arrange it so that it will be readily accessible for study.

Much of the work against typhoid must be educational. It is necessary to convince the people, local boards of health and physicians, even,

that typhoid fever is a preventable disease; that to prevent it their active co-operation is needed; that suspicious cases should be reported early, and should not wait upon positive Widal tests because it is this uncertain period, before a positive diagnosis can be established, that is the most dangerous of all from a general standpoint; for these cases not properly controlled may afford the starting point of an extensive outbreak.

The committee is of the opinion that the physician who does not report a case of continued fever as a probable typhoid as soon as he has eliminated other common causes, and who does not in such a case take appropriate precautions, must shoulder very serious responsibility to the community for any subsequent results in the community.

The use of Widal tests and blood cultures as an aid in making or confirming a diagnosis should be encouraged.

All stools and urine from typhoid patients and carriers should be thoroughly disinfected, whether the patient is in the hospital or in the home, and whether the discharges enter the sewer or whether they are otherwise cared for.

Local boards of health might very properly provide disinfecting outfits which should be loaned to householders for use when typhoid is present, since few householders have the necessary equipment, and if the providing of such equipment is left to the householder, the disinfection is often indifferently carried out.

All convalescents from typhoid, whether in the hospital or in the home, should be detained until two negative examinations of the stools and urine have been obtained at an interval of one week.

Carriers, whether transitory or chronic, should be restrained, by force if need be, from handling all food products. This should apply especially to those employed in dairies, in kitchens or dining rooms.

Circulars of instruction should be furnished to convalescents and carriers containing information as to precautions necessary to prevent the further spread of the infection.

It is the purpose of the committee to render available the information collected by means of maps, card indices, etc.; that there shall be frequent meetings to discuss and tabulate the information obtained; that aggressive work be inaugurated in those places where typhoid fever has been prevalent, without waiting for the usual outbreak; and in case there is any suggestion of an outbreak in a given locality, that some one or more members of the committee will visit that place at once to confer with the local authorities as to what measures may be taken to avert the threatened outbreak.

Such work as has been suggested, persistently followed, cannot fail to produce favorable results.

MILK-BORNE TYPHOID OUTBREAK IN CHELSEA DURING THE LATTER PART OF DECEMBER, 1912.

REPORTED BY H. LINENTHAL, M.D., AND C. E. SIMPSON, M.D., STATE INSPECTORS OF HEALTH.

During the early part of January, 1913, a number of cases of typhoid fever were reported to the Chelsea board of health. An investigation of the cases showed that there was in all probability a common source of the infection, since all the cases occurred on the milk route of one local milk dealer X. In all, 30 cases were reported to the local board. The dates on which the cases were reported were as follows: —

January 8,	1	January 17,	3
January 9,	1	January 18,	1
January 10,	2	January 22,	2
January 11,	1	January 24,	1
January 13,	10	January 29,	2
January 15,	2	February 3,	1
January 16,	3		

An investigation of the cases showed that 14 had their first symptoms between Dec. 25, 1912, and Jan. 1, 1913; 9 of these came down with the disease on Dec. 25, 1912. The incidence of the cases according to the first symptoms is shown in the accompanying chart (see page 78).

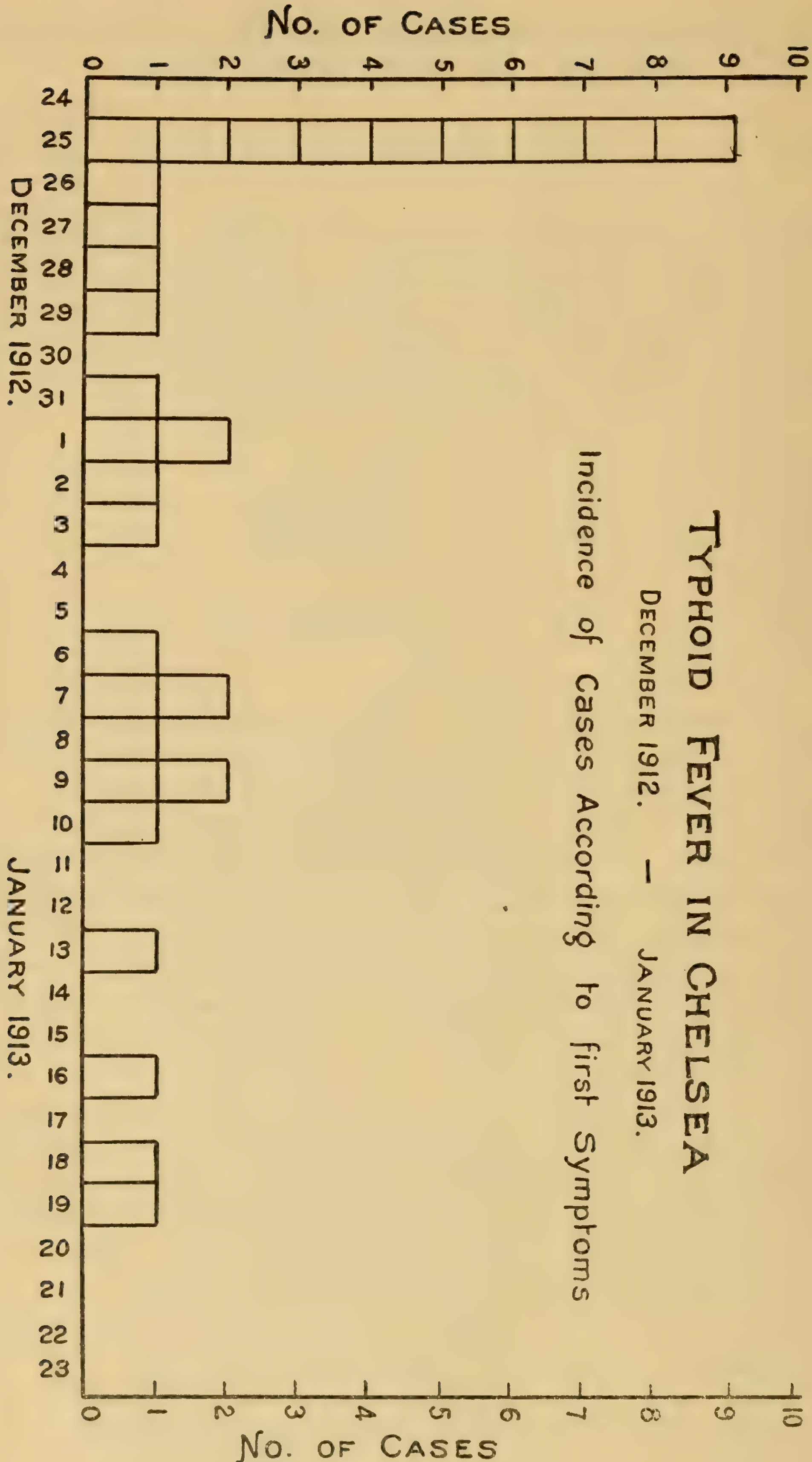
All the cases were practically confined to one part of the city known as Prattville. All the cases took milk from dealer X, with the exception of one case which took sick within ten days after arriving in Chelsea from Russia, and does not therefore belong to this outbreak. The diagnosis of one case reported as typhoid was later changed to "jaundice." This case gave two negative Widals. The total number of cases belonging to this outbreak was therefore 28.

From the incidence of the cases it is highly probable that they resulted from a single infection. The later cases may be the result of delayed incubation periods, and some of them may have been contact cases, although no definite history of contact could be traced in any of them.

Of the 28 cases 14 were males and 14 females.

The age distribution of the cases was as follows: —

	Number.		Number.
1– 5 years,	5	26–30 years,	3
6–10 years,	6	36–40 years,	3
11–15 years,	3	51–55 years,	1
16–20 years,	3	56–60 years,	1
21–25 years,	2	61–65 years,	1


Typhoid Fever in Chelsea
December 1912. — January 1913.
Incidence of Cases According to first Symptoms
No. of Cases
0 1 2 3 4 5 6 7 8 9 10
December 1912.
24 25 26 27 28 29 30 31
January 1913.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
No. of Cases
0 1 2 3 4 5 6 7 8 9 10

The Milk Supply.

X receives about 52 cans of milk daily from 9 farms located in Sterling and Princeton. About 27 of the cans are used for bottling purposes for family trade, the rest are delivered in cans, 15 of which go to the Marine Hospital in Chelsea, and the rest to various groceries in Chelsea and Everett. The morning milk is used for the bottle trade and the evening milk for the can trade. All the morning milk is put into one large mixer from which it is bottled and capped by hand. The evening milk for the can trade is mixed separately. There are thus two mixings daily. All the cases of typhoid occurred on the bottle supply; not a case occurred on the can supply. It is therefore probable that an infected can of milk was delivered with the morning milk and mixed with the entire supply for the bottle trade. The can supply, since it is mixed separately, thus escaped infection.

At the stable in Chelsea the milk is handled by three persons, — X's brother, his nephew and a hired man. X is said to have handled the milk and utensils on very rare occasions only. No history of typhoid could be obtained from any of the men. Widal tests taken from the three of them were negative, and so were bile cultures of the urine. X himself, however, had left on a trip to California on January 6, two days before the first case was reported to the board of health. It was stated that he was not feeling well, and a week before his departure he felt sick, complained of a headache and had fever for one day. That X might have had a mild, unrecognized typhoid for several weeks previous to his departure and thus infected his supply is within the range of probabilities. As he is away now no definite information on this point can be obtained.

There is, however, stronger evidence that the infection came from one of the farms in Princeton. Mr. H., who has a farm in Princeton, produces from 6 to 8 cans daily. He sends his entire supply to X, with the exception of a small quantity which he sells to some families in Princeton and Sterling. H. also acts as a collector of X's milk from the other milk farms. Five cases of typhoid fever in Sterling and Princeton came down with the disease the first week in January. They all took milk from H. The appearance of these cases about the same time with the Chelsea outbreak on a milk supply which goes to X, points very strongly to H.'s milk as the source of the infection of the Chelsea cases as well as of those in Princeton and Sterling. Moreover, a case of typhoid reported in Princeton last September, and a case in Sterling last October, both took milk from H.

An investigation at the H. farm revealed the fact that in 1906 H. had typhoid fever. A year later his mother, wife and one child had the disease. In the same year two other cases of typhoid occurred in the neighborhood. In 1909 there were two cases there, in 1910 one case and in 1911 three cases. One of these cases took sick immediately after returning from a trip, and the disease was probably contracted elsewhere. All the other cases but one used H.'s milk. It is thus seen that since 1906, of the 18 cases of typhoid that occurred 16 used H.'s milk. In view of the fact that H. distributes but a very small quantity of milk in the neighborhood, the occurrence of so many cases on his supply points very strongly to the probability that one of the members of H.'s household, who was engaged in handling the milk, was a chronic carrier who infected the milk from time to time.

It was learned that the only two persons in the H. family who handled the milk or utensils were H. and his mother, both of whom, as was stated above, had had typhoid fever.

A Widal and bile examination of urine and stools from H. and from his daughter, who occasionally went into the milk room, were all negative. Unfortunately, H.'s mother, who had practically complete charge of the milking utensils and milk room, died of pneumonia after an illness of four days, several days before the first cases were reported to the Chelsea board of health. It is, of course, quite possible that she was the disseminator of the infection.

The history of this farm is extremely interesting, and the question presents itself as to how many other farms there are in the State with similar previous histories of typhoid, and with chronic carriers of the disease, periodically excreting typhoid bacilli and giving rise to sporadic cases the source of whose infection cannot be traced.

As soon as the outbreak became apparent the Chelsea board of health took active measures to check the spread of the disease. The entire milk supply of X was pasteurized, and a few days later the H. supply was entirely cut off. The board also addressed a letter to the physicians caring for typhoid fever cases, urging them to use the typhoid prophylactic among the members of the families who are exposed to contact with patients. All the nurses at the Frost Hospital were immunized, and many persons in contact with those ill in private families were likewise immunized.

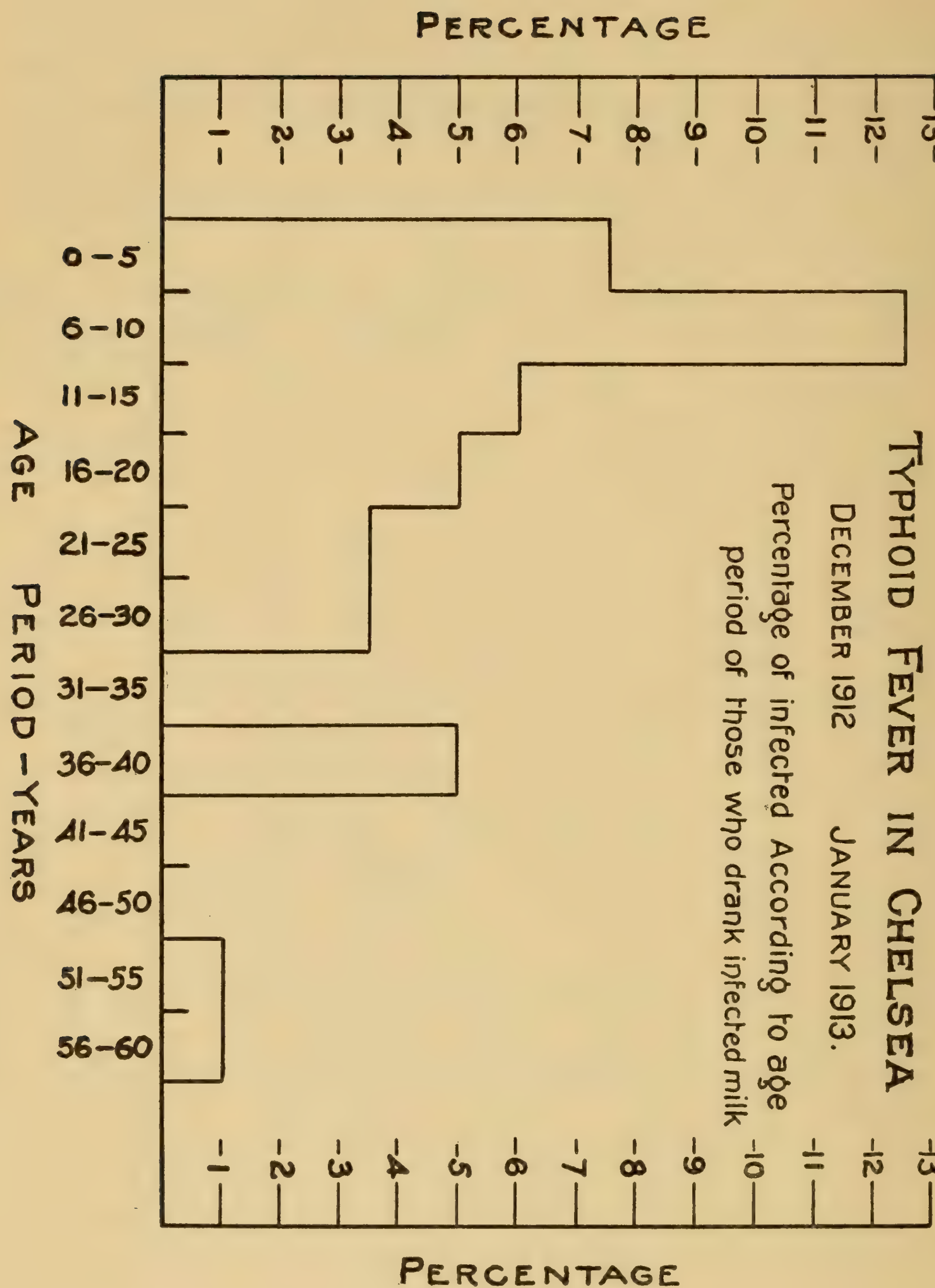
With the energetic assistance of the Chelsea board of health, an effort was made to determine the number of persons that drank the milk at the time the infection probably occurred. It was found that the total number of persons in the families who used the milk in question about that time was 759. Of this number only 270 were milk drinkers; the

others used the milk only in tea or coffee or on cereals. Twenty-two persons of the entire number had had typhoid fever previously; 6 of these had the disease within ten years. The total number of those infected constitutes approximately 3.5 per cent. of the number that used the milk in any form, while it constitutes 10 per cent. of those that were in the habit of drinking milk.

If we compare by age periods the number of those who became infected with the number of those who used the milk we get the following results: —

Ages.	Number who used Milk.	Number of Infected.	Per Cent. of Infected.
1– 5, ...	68	5	7.3
6–10, ...	51	6	11.7
11–15, ...	49	3	6.0
16–20, ...	60	3	5.0
21–25, ...	60	2	3.3
26–30, ...	62	3	3.2
31–35, ...	58	–	–
36–40, ...	61	3	4.9
41–45, ...	72	–	–
46–50, ...	58	–	–
51–55, ...	40	1	2.5
56–60, ...	39	1	2.5
61–65, ...	22	1	4.5
66 and over, ...	59	–	–

The following chart indicates the per cent. infected according to age periods: —


Typhoid Fever in Chelsea
December 1912 January 1913.
Percentage of infected According to age
period of those who drank infected milk
Percentage
1 2 3 4 5 6 7 8 9 10 11 12 13
Age Period - Years
0-5
6-10
11-15
16-20
21-25
26-30
31-35
36-40
41-45
46-50
51-55
56-60
Percentage

AN OUTBREAK OF TYPHOID FEVER IN CAMBRIDGE, SOMERVILLE AND ARLINGTON.

By Dr. F. L. Morse, State Inspector of Health of the North Metropolitan District.

During January and February, 61 persons living in Cambridge, Somerville and Arlington were stricken with typhoid fever. Of this number, 41, or 67 per cent., were taken ill between January 20 and February 2, inclusive, a period of two weeks. Forty-four of these persons lived in Cambridge, 13 in Somerville and 4 in Arlington.

	Week ending—					Total Number of Cases.	Population, 1910.	Cases per 1,000 Population.
	January.		February.					
	18.	25.	1.	8.	15.			
Cambridge,	7	15	15	4	3	44	104,839	.42
Somerville,	2	–	7	1	3	13	77,236	.17
Arlington,	1	3	–	–	–	4	11,187	.36
Totals,	10	18	22	5	6	61	–	–
Per cent. of cases in each week,	16.4	29.5	36	8.2	9.9	–	–	–

The Outbreak in Cambridge.

Forty-four residents of Cambridge were stricken with typhoid fever between January 11 and February 15. Of these cases 31, or 75 per cent., occurred between January 19 and February 2. Nearly all of the families in which typhoid fever occurred lived in North Cambridge or on the streets adjoining Harvard and Central squares. In 1 household 3 cases occurred, and in 5 other households 2 cases occurred, and in 1 family a secondary case developed from direct infection, leaving 29 households in which but one case of the disease occurred.

	Cases.	Totals.
In 1 household,	3	3
In 5 households,	2	10
In 1 household,	1[1]	2
In 29 households,	1	29
Total,	–	44

[1] Second.

All of these patients obtained their water from the public supply, but in view of the fact that few or no cases occurred in other parts of the city using the same supply, this source of infection can be eliminated.

With but four exceptions, all of the 44 cases in this city obtained milk from the same dealer, and it therefore appears that the outbreak of typhoid fever in Cambridge was chiefly among the customers of one milk dealer who produced his own milk, milkman H. Of the four exceptions, 1 took milk from still another dealer, but this patient had also eaten raw oysters frequently before her attack; 1 obtained milk from B; and the other 2, 1 of which was of secondary infection, took milk from C.

The Outbreak in Somerville.

Thirteen residents of Somerville were stricken with typhoid fever between January 12 and February 14. Of these 13 cases, 7, or 54 per cent., occurred between January 26 and February 1, inclusive. Nearly all of the families in which typhoid fever occurred lived along the southern border of the city adjacent to the Cambridge line. In 1 household 3 cases appeared, and in another one, 2 cases, there being a possibility of a secondary infection of 1 patient in the first group, leaving 8 households in which but 1 case of the disease occurred.

	Cases.	Totals.
In 1 household, ...	3	3
In 1 household, ...	2	2
In 8 households, ...	1	8
Total, ...	–	13

These patients obtained their drinking water from the public water supply, which is from the metropolitan system, and as the disease was not prevalent in other parts of the city, this source of infection can be eliminated.

Of the 13 cases reported in this city, with but one exception all had milk from one dealer, milkman H, above referred to as supplying milk to the stricken persons in Cambridge. It therefore appears that the outbreak in Somerville and that in Cambridge arose from a common source of infection. In the exception referred to, the patient took milk from W.

The Outbreak in Arlington.

Four residents of Arlington were stricken with typhoid fever between January 16 and January 25. Nearly all of the families in which the

disease occurred lived on or near Massachusetts Avenue, all being in different households.

The water supply was obtained from the metropolitan system and can be eliminated as a cause of the spread of infection.

Of these 4 patients, 3 obtained milk from the same milkman, H, and it therefore appears that the outbreak was due to the same cause as those that occurred in Cambridge and Somerville. The exception was a traveling man who was away from home most of the time, and it appears that he probably contracted the disease while absent from the town.

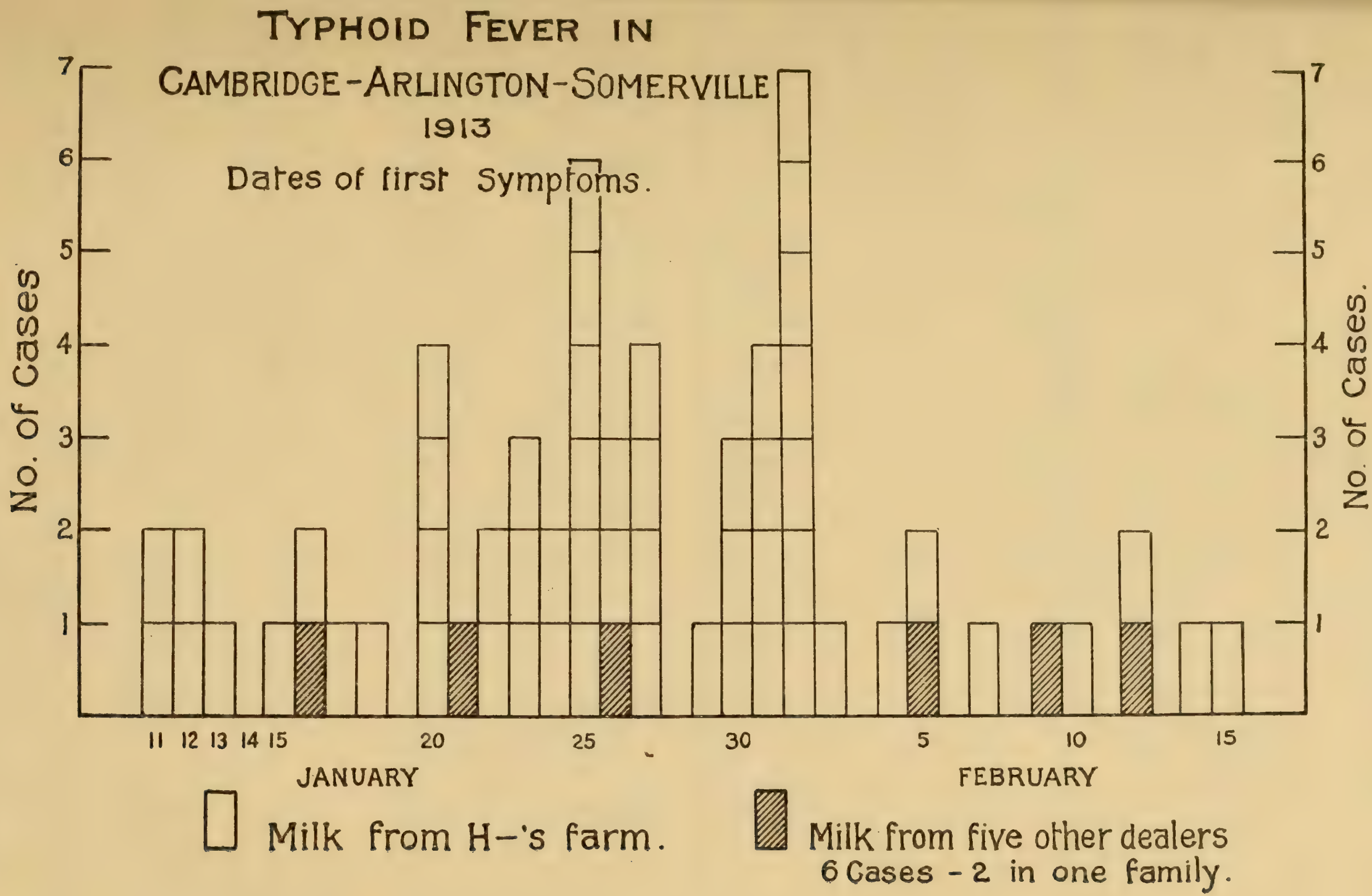
Summary.

It therefore appears that the outbreak in the three communities was practically simultaneous and that it essentially constituted only one epidemic. This epidemic reached its height during the period between January 19 and February 2, when 41 of the 61 cases were reported and the majority of the cases in all three places occurred. The epidemic reached its climax during the last week in January, and the two days when the greatest number of patients went to bed were on January 25, when 6 patients were stricken, and February 1, when 7 were stricken.

Locality.	1–5 Years.	6–10 Years.	11–15 Years.	16–20 Years.	21–30 Years.	31–40 Years.	41–50 Years.	51–60 Years.	Over 60 Years.	Totals.
Cambridge, .	7	3	8	10	8	4	1	1	2	44
Somerville, .	4	3	–	2	2	–	1	1	–	13
Arlington, .	1	–	–	–	1	1	1	–	–	4
Totals, .	12	6	8	12	11	5	3	2	2	61

Milk Supply of Patients Ill with the Disease.

	Cambridge.	Somerville.	Arlington.
Milkman H, ...	40	12	3
Milkman B, ...	1	–	–
Milkman C, ...	2	–	–
Milkman D, ...	1	–	–
Milkman W, ...	–	1	–
Milkman T, ...	–	–	1
Totals, ...	44	13	4


TYPHOID FEVER IN
CAMBRIDGE-ARLINGTON-SOMERVILLE
1913
Dates of first Symptoms.
No. of Cases
1
2
3
4
5
6
7
No. of Cases.
11
12
13
14
15
20
25
30
5
10
15
JANUARY
FEBRUARY
Milk from H—'s farm.
Milk from five other dealers
6 Cases - 2 in one family.

Of milk dealers C, D, W and T, 3 of them are large contractors and have had no other cases of typhoid fever upon their routes. Milk dealer B, although having only a small business, has had no other reported cases occurring on his route.

The milk supply from dealer H, therefore, was found to be the probable source of infection. This dealer produced most of the milk on his own farm in Lexington, and kept between 50 and 60 cows, producing about 50 $8\frac{1}{2}$-quart cans of milk daily, 40 of which were delivered in Cambridge, 10 in Somerville and only about 1 can in Arlington. As an additional supply when necessary, he bought occasionally from Mr. D of Lexington. While Mr. D sold milk to other dealers, no cases of typhoid fever were found on their milk routes.

Milk dealer H has a large business, supplying between 350 and 400 customers, aggregating about 1,500 people using his milk. A visit was made to his farm on February 5. It was found to be well conducted; the milk room was in a building adjacent to the barn and opening through a door from it. After the milking had been done by four employees, the milk was taken to the milk room, cooled, and subsequently mixed and bottled, the latter process being done by the sister of H. The washing of the bottles was done by the drivers of the two teams, but the washing of the pails and cans was usually done by H himself. There were no provisions for the steam sterilization of the utensils used, and a mechanical wash in warm, soapy water with a cold water rinse was all that was done for cleanliness. The bottles of milk were then put in cases until taken by the drivers the next morning and placed in the teams. There was no regular order of bottling, and the driver who got to the milk room first in the morning was first to load his team with the milk in the nearest cases. One team distributed milk entirely in Cambridge, along the route of the residences of the patients ill with the disease, and the team which delivered in Somerville also had a considerable number of customers along the border line in Cambridge. The fact that cases occurred upon both routes meant that the entire supply was infected. Bottles were collected by the drivers at the houses of the customers and brought back by them each day to the farm.

The water on the premises was obtained from a driven well, located between the barn and the house, and from its location it did not appear to be seriously polluted by surface drainage.

Five days previous to this visit, blood specimens were taken from the four who did the milking, from Mr. H and from his sister, who did the bottling, and on this day, February 5, a positive Widal reaction was obtained from one of the milkers. Two subsequent examinations were

made of this man's excretions from the bowels and kidneys, one of which was found to contain typhoid bacilli, so that it may be presumed that he was the source of the infection.

Conclusions.

A study of the sudden outbreak of 61 cases of typhoid fever in Arlington, Cambridge and Somerville which occurred at a time of the year when few or no cases existed in these communities shows that the disease was probably contracted from infected milk supplied by milk dealer H of Lexington. A clinical examination of the persons handling the milk or milking utensils failed to show any evidence of any sickness, but a blood test of one of the milkers showed a positive reaction of typhoid fever, and a subsequent examination of his excreta showed typhoid bacilli present. Following the exclusion of this man from handling the milk, and the pasteurization of the milk supply on February 5, the epidemic ceased. The only other persons stricken with the disease were those in families with the afflicted. These patients, stricken apparently from direct contact with the sick, were taken ill later than February 15.

Precautions to prevent the Spread of the Infection.

Although at least 7 of the many cases of typhoid fever occurring in Cambridge between January 14 and February 1 were known to have been reported promptly to the local board of health, it was not until February 5 that milk producer and dealer H was informed by the said board that all milk delivered by him should be pasteurized.

On February 4 and 5, 4 cases of typhoid fever were reported to the Somerville board of health, and upon investigation it was found that all of these patients obtained milk from dealer H. A visit was immediately made to his farm by the milk inspector and the medical inspector of the board. As a result of the examination of the existing conditions, dealer H was instructed (1) to boil all cans, pails, bottles and other utensils used in the production of the milk; (2) to pasteurize all milk before delivery the following morning; (3) to remove the man who responded positively to the Widal reaction from any connection with milk whatever.

From an observation of the lack of care exercised in cleaning the milking utensils and bottles as mentioned above and the inefficiency of the process, it was found necessary to install a steam boiler in order to carry out the provisions of the first two recommendations. Accordingly, that day a boiler was obtained and the milking utensils and bottles thoroughly

treated with live steam and the milk pasteurized by the following method: the milk in 8½-quart cans was placed in a wooden sink, 2 by 6 feet, containing water, and steam forced into it until it reached a temperature of 145 degrees Fahrenheit. During this process, which lasted twenty minutes, the milk was constantly stirred, after which it was rapidly cooled, mixed and bottled, ready for delivery the following morning.

The efficiency of these recommendations in controlling the spread of the disease was shown by the rapid diminution in the number of cases reported, the last one going to bed ill on February 15, ten days after these measures were instituted and corresponding to the incubation period of the disease.

Deaths resulting from the Outbreak.

Locality.	Date.	Total Number of Cases.	Deaths.
Cambridge, . .	January 11–February 15, ...	44	8
Somerville, . .	January 12–February 14, ...	13	1
Arlington, . .	January 16–January 25, ...	4	--
Total, . .	. . . .	61	9

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OF

MASSACHUSETTS.

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1913.

TABLE OF CONTENTS.

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THE STATE BOARD OF PUBLICATION.

RETURNS OF DISEASES.

Cases of Diseases declared by the State Board of Health to be Dangerous to the Public Health.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending—					
	Mar. 1.	Mar. 8.	Mar. 15.	Mar. 22.	Mar. 29.	Total.
Diphtheria,	141	123	142	118	121	645
Measles,	1,331	1,709	1,347	1,266	1,187	6,840
Scarlet fever,	253	241	253	220	181	1,148
Typhoid fever,	28	25	11	18	19	101
Tuberculosis, pulmonary (or not classified),	121	131	173	156	156	737
Tuberculosis, other than pulmonary,	10	22	11	10	13	66
Cerebro-spinal meningitis,	6	6	4	5	6	27
Whooping cough,	70	111	67	78	88	414
Varicella,	159	138	117	146	129	689
Ophthalmia neonatorum,	43	40	40	36	47	206
Anterior poliomyelitis,	1	–	–	2	1	4
Smallpox,	2	–	8	6	7	23
Trachoma,	2	2	2	3	4	13
Leprosy,	–	1	–	–	–	1

Cases of Infectious Diseases not included in the Above Table.

[Cases not notifiable under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending —					
	Mar. 1.	Mar. 8.	Mar. 15.	Mar. 22.	Mar. 29.	Total.
Mumps,	30	43	68	35	27	203
Erysipelas,	–	1	–	–	–	1
Impetigo contagiosa,	–	–	–	3	1	4
Rabies,	–	–	–	1	–	1

Note. — These totals are somewhat too high, as some cases are reported twice. For example, a case may be reported first by the home town and again by a neighboring town to which it has gone for treatment.

RETURNS OF DEATHS.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health.

[Weekly voluntary returns of deaths from cities and towns of more than 10,000 population.]

Week ending March 1, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported (All Causes).	Deaths under Five Years (All Causes).	Deaths from Diseases Dangerous to the Public Health. Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	248[1] 284[2]	63[1] 71[2]	42[1] 44[2]	27[1] 27[2]	1[1] 1[2]	4[1] 4[2]	1[1] 2[2]	1[1] 2[2]	4[1] 4[2]	3[1] 3[2]	1[1] 1[2]
Worcester,	145,986	54	14	7	2	3	–	–	–	–	–	2
Fall River,	119,295	37	11	4	3	–	–	–	–	–	–	–
Lowell,	106,294	38	13	7	3	1	2	–	–	–	1	–
Cambridge,	104,839	–	–	–	–	–	–	–	–	–	–	–
New Bedford,	96,652	35	16	2	2	–	–	–	–	–	–	–
Lynn,	89,336	37	8	4	3	–	–	–	–	–	–	1
Springfield,	88,926	35	6	4	3	–	–	–	–	–	1	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	34	3	3	1	–	1	–	–	1	–	–
Holyoke,	57,730	25	10	4	2	–	1	–	1	–	–	–
Brockton,	56,878	15	5	–	–	–	–	–	–	–	–	–
Malden,	44,404	12	5	2	2	–	–	–	–	–	–	–
Haverhill,	44,115	–	6	1	–	–	1	–	–	–	–	–
Salem,	43,697	17	7	4	2	–	1	1	–	–	–	–
Newton,	39,806	12	5	1	1	–	–	–	–	–	–	–
Fitchburg,	37,826	14	3	–	–	–	–	–	–	–	–	–
Taunton,	34,259	22	4	3	2	–	–	–	1	–	–	–
Everett,	33,484	12	5	1	–	–	–	–	–	–	1	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	13	–	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	19	3	3	3	–	–	–	–	–	–	–
Waltham,	27,834	11	1	2	2	–	–	–	–	–	–	–
Brookline,	27,792	6	1	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	10	5	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	5	1	1	–	–	–	–	–	–	1	–
North Adams,	22,019	7	1	1	–	–	1	–	–	–	–	–
Northampton,	19,431	6	1	–	–	–	–	–	–	–	–	–
Beverly,	18,650	4	2	–	–	–	–	–	–	–	–	–
Revere,	18,219	1	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	4	3	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	7	4	2	1	–	1	–	–	–	–	–
Westfield,	16,044	6	–	–	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	4	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	4	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	7	2	–	–	–	–	–	–	–	–	–
Gardner,	14,699	5	2	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	8	–	1	1	–	–	–	–	–	–	–
Clinton,	13,075	4	1	1	–	1	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	5	1	–	–	–	–	–	–	–	–	–
Framingham,	12,948	3	1	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	3	2	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	4	–	1	1	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	3	1	1	1	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	3	–	1	1	–	–	–	–	–	–	–
Arlington,	11,187	4	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	5	3	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	6	–	1	–	1	–	–	–	–	–	–
Total of reporting towns,	2,393,340	850	227	106	63	7	12	3	4	5	7	4

[1] Nonresidents deducted. [2] Total deaths.

Week ending March 8, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported (All Causes).	Deaths under Five Years (All Causes).	Deaths from Diseases Dangerous to the Public Health.								
				Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	254[1] 279[2]	64[1] 69[2]	37[1] 37[2]	19[1] 20[2]	4[1] 4[2]	3[1] 3[2]	2[1] 3[2]	1[1] 1[2]	2[1] 2[2]	1[1] 2[2]	1[1] 2[2]
Worcester,	145,986	69	20	10	5	2	1	–	–	–	–	2
Fall River,	119,295	–	18	5	3	1	–	–	–	–	1	–
Lowell,	106,294	40	9	3	3	–	–	–	–	–	–	–
Cambridge,	104,839	26	7	5	4	–	–	1	–	–	–	–
New Bedford,	96,652	34	19	3	–	1	2	–	–	–	–	–
Lynn,	89,336	27	4	–	–	–	–	–	–	–	–	–
Springfield,	88,926	34	7	2	–	2	–	–	–	–	–	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	22	4	2	1	–	1	–	–	–	–	–
Holyoke,	57,730	28	17	4	2	–	2	–	–	–	–	–
Brockton,	56,878	14	8	2	1	–	1	–	–	–	–	–
Malden,	44,404	12	2	–	–	–	–	–	–	–	–	–
Haverhill,	44,115	16	6	5	2	1	–	1	–	–	1	–
Salem,	43,697	20	4	4	2	1	–	–	–	–	1	–
Newton,	39,806	12	1	2	2	–	–	–	–	–	–	–
Fitchburg,	37,826	18	5	3	–	–	–	–	–	3	–	–
Taunton,	34,259	18	1	3	3	–	–	–	–	–	–	–
Everett,	33,484	6	2	4	3	–	–	–	–	–	1	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	21	6	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	18	1	–	–	–	–	–	–	–	–	–
Waltham,	27,834	8	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	8	1	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	6	2	1	1	–	–	–	–	–	–	–
Gloucester,	24,398	8	–	1	–	1	–	–	–	–	–	–
Medford,	23,150	6	1	–	–	–	–	–	–	–	–	–
North Adams,	22,019	6	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	10	5	–	–	–	–	–	–	–	–	–
Beverly,	18,650	5	1	–	–	–	–	–	–	–	–	–
Revere,	18,219	7	1	3	2	1	–	–	–	–	–	–
Leominster,	17,580	5	2	2	1	–	1	–	–	–	–	–
Attleborough,	16,215	4	1	–	–	–	–	–	–	–	–	–
Westfield,	16,044	10	1	2	2	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	3	1	1	–	1	–	–	–	–	–	–
Woburn,	15,308	6	1	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	3	2	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	5	1	1	1	–	–	–	–	–	–	–
Clinton,	13,075	1	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	2	1	1	–	–	–	–	1	–	–	–
Framingham,	12,948	5	1	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	2	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	1	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	8	2	1	–	–	1	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	8	–	1	1	–	–	–	–	–	–	–
Arlington,	11,187	3	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	3	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,397,755	847	234	108	59	15	12	5	2	5	6	4

[1] Nonresidents deducted. [2] Total deaths.

Week ending March 15, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported (All Causes).	Deaths under Five Years (All Causes).	Deaths from Diseases Dangerous to the Public Health.								
				Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston, ...	686,092	246[1] 284[2]	57[1] 67[2]	36[1] 49[2]	23[1] 28[2]	2[1] 3[2]	10[1] 11[2]	1[1] 2[2]	1[1] 1[2]	1[1] 1[2]	2[1] 2[2]	1[1] 1[2]
Worcester, ...	145,986	47	15	6	4	1	–	–	–	–	–	1
Fall River, ...	119,295	47	23	8	3	–	–	–	–	1	1	3
Lowell, ...	106,294	39	11	3	1	1	1	–	–	–	–	–
Cambridge, ...	104,839	34	7	6	4	–	–	–	–	–	2	–
New Bedford, ...	96,652	–	–	–	–	–	–	–	–	–	–	–
Lynn, ...	89,336	20	3	–	–	–	–	–	–	–	–	–
Springfield, ...	88,926	39	12	4	2	2	–	–	–	–	–	–
Lawrence, ...	85,892	–	–	–	–	–	–	–	–	–	–	–
Somerville, ...	77,236	14	1	–	–	–	–	–	–	–	–	–
Holyoke, ...	57,730	19	10	1	–	–	–	–	1	–	–	–
Brockton, ...	56,878	18	7	–	–	–	–	–	–	–	–	–
Malden, ...	44,404	19	5	2	1	–	–	–	–	1	–	–
Haverhill, ...	44,115	14	6	–	–	–	–	–	–	1	–	1
Salem, ...	43,697	16	4	2	1	–	1	–	–	–	–	–
Newton, ...	39,806	7	1	–	–	–	–	–	–	–	–	–
Fitchburg, ...	37,826	20	4	3	3	–	–	–	–	–	–	–
Taunton, ...	34,259	13	2	2	2	–	–	–	–	–	–	–
Everett, ...	33,484	14	3	–	–	–	–	–	–	–	–	–
Quincy, ...	32,642	–	–	–	–	–	–	–	–	–	–	–
Chelsea, ...	32,452	12	–	2	2	–	–	–	–	–	–	–
Pittsfield, ...	32,121	14	1	1	1	–	–	–	–	–	–	–
Waltham, ...	27,834	6	–	–	–	–	–	–	–	–	–	–
Brookline, ...	27,792	10	2	–	–	–	–	–	–	–	–	–
Chicopee, ...	25,401	11	2	2	2	–	–	–	–	–	–	–
Gloucester, ...	24,398	6	–	–	–	–	–	–	–	–	–	–
Medford, ...	23,150	6	1	1	–	1	–	–	–	–	–	–
North Adams, ...	22,019	7	4	2	–	1	1	–	–	–	–	–
Northampton, ...	19,431	14	2	–	–	–	–	–	–	–	–	–
Beverly, ...	18,650	10	2	–	–	–	–	–	–	–	–	–
Revere, ...	18,219	2	–	1	1	–	–	–	–	–	–	–
Leominster, ...	17,580	5	–	–	–	–	–	–	–	–	–	–
Attleborough, ...	16,215	8	5	1	–	–	–	–	–	–	1	–
Westfield, ...	16,044	8	3	–	–	–	–	–	–	–	–	–
Peabody, ...	15,721	–	–	–	–	–	–	–	–	–	–	–
Melrose, ...	15,715	2	–	–	–	–	–	–	–	–	–	–
Woburn, ...	15,308	7	1	–	–	–	–	–	–	–	–	–
Newburyport, ...	14,949	9	–	–	–	–	–	–	–	–	–	–
Gardner, ...	14,699	–	–	–	–	–	–	–	–	–	–	–
Marlborough, ...	14,579	4	–	1	1	–	–	–	–	–	–	–
Clinton, ...	13,075	2	–	–	–	–	–	–	–	–	–	–
Milford, ...	13,055	–	–	–	–	–	–	–	–	–	–	–
Adams, ...	13,026	1	–	–	–	–	–	–	–	–	–	–
Framingham, ...	12,948	2	–	–	–	–	–	–	–	–	–	–
Weymouth, ...	12,895	–	–	–	–	–	–	–	–	–	–	–
Watertown, ...	12,875	3	2	–	–	–	–	–	–	–	–	–
Southbridge, ...	12,592	5	3	–	–	–	–	–	–	–	–	–
Plymouth, ...	12,141	–	–	–	–	–	–	–	–	–	–	–
Webster, ...	11,509	3	–	–	–	–	–	–	–	–	–	–
Methuen, ...	11,448	–	–	–	–	–	–	–	–	–	–	–
Wakefield, ...	11,404	5	–	1	1	–	–	–	–	–	–	–
Arlington, ...	11,187	6	3	3	3	–	–	–	–	–	–	–
Greenfield, ...	10,427	4	–	–	–	–	–	–	–	–	–	–
Winthrop, ...	10,132	–	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,301,103	836	212	101	60	9	14	2	2	4	6	6

[1] Nonresidents deducted. [2] Total deaths.

Week ending March 22, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported (All Causes).	Deaths under Five Years (All Causes).	DEATHS FROM DISEASES DANGEROUS TO THE PUBLIC HEALTH. Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	228[1] 260[2]	52[1] 57[2]	25[1] 38[2]	16[1] 20[2]	5[1] 7[2]	4[1] 5[2]	– –	1[1] 1[2]	2[1] 2[2]	2[1] 2[2]	1[1] 1[2]
Worcester,	145,986	62	12	7	3	1	2	–	1	–	–	–
Fall River,	119,295	47	21	5	1	1	–	–	–	2	–	–
Lowell,	106,294	34	8	3	2	1	–	–	–	–	–	–
Cambridge,	104,839	30	3	9	8	–	–	–	–	1	–	–
New Bedford,	96,652	37	11	7	4	1	1	–	–	–	–	1
Lynn,	89,336	32	4	3	1	–	1	–	–	–	1	–
Springfield,	88,926	41	13	7	2	1	3	–	–	–	1	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	22	6	5	1	1	1	–	1	1	–	–
Holyoke,	57,730	17	6	5	2	1	1	–	1	–	–	–
Brockton,	56,878	16	2	2	2	–	–	–	–	–	–	–
Malden,	44,404	9	4	4	2	–	1	–	–	1	–	–
Haverhill,	44,115	15	4	1	–	–	–	–	–	–	1	–
Salem,	43,697	8	1	1	1	–	–	–	–	–	–	–
Newton,	39,806	9	4	1	–	1	–	–	–	–	–	–
Fitchburg,	37,826	18	8	1	–	–	1	–	–	–	–	–
Taunton,	34,259	15	7	2	–	–	–	–	2	–	–	–
Everett,	33,484	4	–	–	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	19	6	1	1	–	–	–	–	–	–	–
Pittsfield,	32,121	17	5	2	–	1	1	–	–	–	–	–
Waltham,	27,834	4	1	–	–	–	–	–	–	–	–	–
Brookline,	27,792	7	1	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	9	4	1	–	–	–	–	1	–	–	–
Gloucester,	24,398	7	1	–	–	–	–	–	–	–	–	–
Medford,	23,150	9	2	1	1	–	–	–	–	–	–	–
North Adams,	22,019	2	1	–	–	–	–	–	–	–	–	–
Northampton,	19,431	11	2	–	–	–	–	–	–	–	–	–
Beverly,	18,650	4	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	5	3	1	–	–	–	1	–	–	–	–
Leominster,	17,580	5	2	1	1	–	–	–	–	–	–	–
Attleborough,	16,215	3	1	1	–	–	–	–	–	1	–	–
Westfield,	16,044	10	4	3	2	–	–	–	–	1	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	5	1	–	–	–	–	–	–	–	–	–
Woburn,	15,308	5	1	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	2	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	2	–	1	1	–	–	–	–	–	–	–
Clinton,	13,075	1	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	4	3	–	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	3	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	3	–	1	1	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	4	2	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	2	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	1	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,373,403	820	211	114	56	16	17	1	7	9	5	2

[1] Nonresidents deducted.   [2] Total deaths.

Week ending March 29, 1913.

CITIES AND TOWNS.	Population Census for 1910.	Total Number reported (All Causes).	Deaths under Five Years (All Causes).	Deaths from Diseases Dangerous to the Public Health.								
				Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	218[1] 247[2]	65[1] 76[2]	31[1] 37[2]	16[1] 18[2]	3[1] 6[2]	4[1] 4[2]	- -	1[1] 1[2]	4[1] 4[2]	2[1] 2[2]	1[1] 2[2]
Worcester,	145,986	56	9	6	4	1	-	-	-	-	-	1
Fall River,	119,295	39	16	7	2	-	-	-	-	1	4	-
Lowell,	106,294	33	12	5	1	2	1	-	-	-	-	-
Cambridge,	104,839	27	1	3	3	-	-	-	-	-	-	-
New Bedford,	96,652	29	9	4	3	1	-	-	-	-	-	-
Lynn,	89,336	-	-	-	-	-	-	-	-	-	-	-
Springfield,	88,926	27	8	3	2	-	1	-	-	-	-	-
Lawrence,	85,892	-	-	-	-	-	-	-	-	-	-	-
Somerville,	77,236	21	6	4	1	2	-	-	-	-	-	-
Holyoke,	57,730	20	8	6	3	1	1	-	1	-	-	-
Brockton,	56,878	11	4	2	2	-	-	-	-	-	-	-
Malden,	44,404	7	-	-	-	-	-	-	-	-	-	-
Haverhill,	44,115	14	3	4	2	-	-	-	-	-	1	1
Salem,	43,697	14	4	2	2	-	-	-	-	-	-	-
Newton,	39,806	6	2	1	1	-	-	-	-	-	-	-
Fitchburg,	37,826	11	-	4	1	-	-	-	-	3	-	-
Taunton,	34,259	14	1	2	2	-	-	-	-	-	-	-
Everett,	33,484	17	2	1	1	-	-	-	-	-	-	-
Quincy,	32,642	-	-	-	-	-	-	-	-	-	-	-
Chelsea,	32,452	12	6	1	-	1	-	-	-	-	-	-
Pittsfield,	32,121	16	4	2	1	1	-	-	-	-	-	-
Waltham,	27,834	2	-	-	-	-	-	-	-	-	-	-
Brookline,	27,792	9	2	-	-	-	-	-	-	-	-	-
Chicopee,	25,401	8	2	2	1	1	-	-	-	-	-	-
Gloucester,	24,398	5	-	2	1	1	-	-	-	-	-	-
Medford,	23,150	6	-	1	1	-	-	-	-	-	-	-
North Adams,	22,019	10	2	-	-	-	-	-	-	-	-	-
Northampton,	19,431	10	-	-	-	-	-	-	-	-	-	-
Beverly,	18,650	4	-	-	-	-	-	-	-	-	-	-
Revere,	18,219	6	3	1	1	-	-	-	-	-	-	-
Leominster,	17,580	2	-	-	-	-	-	-	-	-	-	-
Attleborough,	16,215	5	2	2	1	-	-	-	-	-	-	1
Westfield,	16,044	6	-	2	1	-	1	-	-	-	-	-
Peabody,	15,721	-	-	-	-	-	-	-	-	-	-	-
Melrose,	15,715	8	-	-	-	-	-	-	-	-	-	-
Woburn,	15,308	6	-	2	1	-	-	-	-	-	-	1
Newburyport,	14,949	1	-	-	-	-	-	-	-	-	-	-
Gardner,	14,699	-	-	-	-	-	-	-	-	-	-	-
Marlborough,	14,579	3	1	-	-	-	-	-	-	-	-	-
Clinton,	13,075	5	1	-	-	-	-	-	-	-	-	-
Milford,	13,055	-	-	-	-	-	-	-	-	-	-	-
Adams,	13,026	3	1	1	1	-	-	-	-	-	-	-
Framingham,	12,948	4	1	1	-	1	-	-	-	-	-	-
Weymouth,	12,895	-	-	-	-	-	-	-	-	-	-	-
Watertown,	12,875	5	1	-	-	-	-	-	-	-	-	-
Southbridge,	12,592	4	1	-	-	-	-	-	-	-	-	-
Plymouth,	12,141	-	-	-	-	-	-	-	-	-	-	-
Webster,	11,509	2	-	-	-	-	-	-	-	-	-	-
Methuen,	11,448	-	-	-	-	-	-	-	-	-	-	-
Wakefield,	11,404	6	-	-	-	1	-	-	-	-	-	-
Arlington,	11,187	3	-	-	-	-	-	-	-	-	-	-
Greenfield,	10,427	-	-	-	-	-	-	-	-	-	-	-
Winthrop,	10,132	-	-	-	-	-	-	-	-	-	-	-
Total of reporting towns,	2,297,992	744	188	108	57	19	8	-	2	8	7	6

[1] Nonresidents deducted. [2] Total deaths.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health — *Concluded.*

DISEASE.	Place.	Week ending — Mar. 1.	Mar. 8.	Mar. 15.	Mar. 22.	Mar. 29.
Anterior poliomyelitis,	Fall River, .	1	–	–	1	–
	Lowell, . .	–	–	–	–	1
	Somerville, .	–	–	–	–	1

Deaths from Infectious Diseases not specifically mentioned in Above Tables.

[Weekly voluntary returns of deaths from cities and towns of more than 10,000 population.]

DISEASE.	Place.	Week ending — Mar. 1.	Mar. 8.	Mar. 15.	Mar. 22.	Mar. 29.
Acute lung diseases, .	Boston, . .	33[1] 41[2]	50[1] 56[2]	45[1] 48[2]	45[1] 51[2]	48[1] 51[2]
	Worcester, .	11	12	10	12	11
	Fall River, .	13	10	14	10	7
	Lowell, . .	5	5	8	3	4
	Cambridge, .	–	7	8	5	4
	New Bedford, .	10	13	–	2	9
	Lynn, . .	7	9	2	4	–
	Springfield, .	2	5	8	11	6
	Somerville, .	3	4	2	1	4
	Holyoke, . .	2	5	4	4	2
	Brockton, .	3	4	7	1	4
	Malden, . .	3	4	3	1	–
	Haverhill, .	4	4	2	1	1
	Salem, . .	5	5	4	–	3
	Newton, . .	3	3	2	3	–
	Fitchburg, .	–	5	3	1	2
	Taunton, .	3	5	–	3	2
	Everett, . .	2	–	4	–	3
	Chelsea, . .	2	3	–	2	2
	Pittsfield, .	5	6	2	3	2
	Waltham, .	4	2	1	1	2
	Brookline, .	1	3	3	2	2
	Chicopee, .	2	–	1	–	1
	Medford, .	–	1	2	1	–
	North Adams, .	1	–	1	1	1
	Northampton, .	–	1	–	3	–
	Beverly, . .	–	1	3	2	2
	Revere, . .	1	–	–	–	–
	Leominster, .	1	–	1	1	–
	Attleborough, .	3	1	3	1	–
	Westfield, .	1	5	1	3	3
	Melrose, . .	2	–	–	1	1
	Woburn, . .	–	1	1	1	2
	Newburyport, .	5	–	1	1	1
	Gardner, .	2	–	–	–	–
	Marlborough, .	1	–	1	–	1
	Clinton, . .	–	–	–	–	3
	Adams, . .	1	–	–	–	1
	Framingham, .	2	2	1	–	–
	Watertown, .	1	–	–	–	2
	Southbridge, .	1	1	3	1	1
	Webster, . .	1	1	1	2	–
	Wakefield, .	–	3	1	–	–
	Winthrop, .	3	–	–	–	–

[1] Nonresidents deducted. [2] Total deaths.

Deaths from Infectious Diseases not specifically mentioned in Above Tables — *Concluded.*

DISEASE.	Place.	Week ending —				
		Mar. 1.	Mar. 8.	Mar. 15.	Mar. 22.	Mar. 29.
Diarrhœal diseases, .	Boston, . .	4[1]	4[1]	4[1]	1[1]	2[1]
		5[2]	4[2]	8[2]	2[2]	3[2]
	Fall River, .	2	–	4	5	3
	Lowell, . .	2	–	–	2	2
	Cambridge, .	–	–	–	1	–
	New Bedford, .	2	1	–	1	–
	Springfield, .	–	1	–	2	1
	Somerville, .	–	1	–	–	–
	Holyoke, . .	–	4	2	2	1
	Salem, . .	–	1	1	–	–
	Taunton, .	–	–	1	–	–
	North Adams, .	–	–	1	1	–
	Northampton, .	–	1	1	–	–
	Watertown, .	–	–	1	–	–
Erysipelas, . .	Boston, . .	2[1]	1[1]	–	6[1]	1[1]
		2[2]	1[2]	–	6[2]	1[2]
	Worcester, .	1	2	–	–	1
	Lynn, . .	–	–	–	1	–
	Somerville, .	–	1	–	–	–
	North Adams, .	1	–	–	–	–
	Northampton, .	–	–	–	–	–
	Newburyport, .	–	1	1	–	–
Influenza, . .	Boston, . .	–[1]	–[1]	–	–	–
		–[2]	5[2]	1[2]	–	–
	Fall River, .	–	1	–	–	1
	Cambridge, .	–	–	3	–	1
	Lynn, . .	–	1	2	1	–
	Springfield, .	–	–	–	–	1
	Haverhill, .	1	1	–	–	–
Meningitis, other than cerebro-spinal.	Watertown, .	1	–	1	–	–
Puerperal fever, .	Boston, . .	–	–	2[1]	–	–
		–	–	2[2]	–	1
	Fall River, .	1	1	–	2	2

[1] Nonresidents deducted. [2] Total deaths.

REPORT ON INSPECTION OF FOOD AND DRUGS.

Laboratory Examinations of Food and Drugs.

The following summary presents the results of the laboratory examinations during the month of March, 1913, of samples of food and drugs collected by inspectors of the Board: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Baking powder,	2	1	3
Butter, . .	1	1	2
Canned fruits and vegetables,	3	–	3
Cider, . .	–	2	2
Cocoa, . .	6	–	6
Coffee, . .	4	1	5
Confectionery, .	7	1	8
Cream, . .	3	–	3
Cream of tartar,	4	–	4
Drugs, . .	138	16	154
Eggs, . .	3	–	3
Flavoring extracts: —			
Lemon, .	7	4	11
Orange, .	1	–	1
Peppermint .	2	–	2
Vanilla, .	2	–	2
Wintergreen,	4	1	5
Honey, . .	4	–	4
Horseradish, .	1	–	1
Jams and jellies,	2	–	2
Lard, . .	–	3	3

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Maple sugar, .	5	23	28
Meat products: —			
Canned meats,	1	–	1
Hamburg steak, .	5	–	5
Sausages, .	12	2	14
Milk, . .	354	68	422
Nuts, . .	1	–	1
Nonalcoholic drinks, . .	17	–	17
Olive oil, . .	5	–	5
Peanut butter, .	1	–	1
Proprietary foods, . .	–	1	1
Pickles, . .	2	–	2
Salad dressing, .	1	–	1
Shrimp, . .	1	–	1
Spice, . .	5	–	5
Syrups, . .	2	–	2
Table sauce, .	2	–	2
Tea, . .	1	–	1
Totals, .	609	124	733

The samples of drugs found to be adulterated were alcohol, bromide potassium, spirit of nitrous ether, spirit of anise, spirit of camphor, spirit of peppermint, precipitated sulphur, tincture of iodine, tincture of vanilla.

The cities and towns in which samples were collected were: Abington, Andover, Beverly, Boston, Brookline, Cambridge, Concord, Everett, Fitchburg, Framingham, Franklin, Gardner, Lowell, Lynn, Malden, Marlborough, Natick, Needham, New Bedford, Newton, Palmer, Salem, Somerville, Southbridge, Springfield, Waltham, Ware, Watertown, Webster, Westborough, Weymouth, Worcester.

Prosecutions for Violations of the Law relating to Food and Drugs.

Six convictions were secured during the month of March, 1913, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Llewellyn F. Gates, . .	Westford, .	Milk (total solids, 10.18; watered).
2	Samuel P. Pike, . .	Lowell, . .	Lard (cottonseed oil).
3	Wadyslaw Kokoceriski, .	Webster, . .	Alcohol (75.16 per cent. U. S. P.).
4	Michael A. Lilla, . .	Webster, . .	Alcohol (73.85 per cent. U. S. P.).
5	Hector Dupree, . .	Dudley, . .	Alcohol (30.82 per cent. U. S. P.).
6	John Stainck, . . .	Dudley, . .	Alcohol (73.61 per cent. U. S. P.).

Fines imposed, $175.

List of Adulterated or Improperly Labeled Foods.

The following shows the adulterated or improperly labeled foods, during the month of March, 1913: —

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
19609	Pilgrim Baking Powder,	Edgar Kirby, Swedesboro, N. J.,	Alum phosphate baking powder; names and percentages of ingredients, not stated on label.
2073-S	Coleman's Pure Extract of Lemon.	Coleman's Specialty Company, Boston, Mass.,	Dilute solution of citral, made in imitation of extract of lemon; colored.
2377-S	Elixir Potassium Bromide.	Hayes Drug Company, Fitchburg, Mass.,	78.7 per cent. national formulary strength.
19473	Essence of wintergreen,	The Lee & Osgood Company, Norwich., Conn.,	Improperly labeled; marked 3 per cent. oil, found 1.82 per cent. oil.
19572	Spirit of camphor,	Arthur Chemical Company, New Haven, Conn.,	83.3 per cent. U. S. P. strength.
q 10745	Spirit of camphor,	A. E. Moors, Lowell, Mass.,	71.7 per cent. U. S. P. strength.
q 10715	Tincture of iodine,	Charles A. Baker, Beverly, Mass.,	80.8 per cent. U. S. P. strength.
19055	Bracer, Wild Cherry,	. . . .	8.72 per cent. alcohol by volume.
2517-S 2519-S	Milk,	Edward P. Corrigan, Malden, Mass.,	Total solids, 11 per cent.; fat, 2.95 per cent.; contained added water. Total solids, 10.98 per cent.; fat, 3 per cent.; contained added water.
q 10728 q 10729	Milk,	Isabel C. Perkins, Worcester, Mass.,	Total solids, 12.08 per cent.; fat, 2.3 per cent.; protein, 3.33 per cent.; skimmed milk. Total solids, 11.94 per cent.; fat, 2.6 per cent.; protein, 3.33 per cent.; skimmed milk.
2551-S	Milk,	Edward P. Corrigan, Malden, Mass.,	Total solids, 10.62 per cent.; fat, 3.1 per cent.; contained added water.

REPORT ON INSPECTION OF DAIRIES.

During the month of March, 1913, 392 dairies were examined in the following places: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Arlington,	15	10	66.67	5	33.33
Second inspection,	1	1	100.00	–	–
Third inspection,	6	3	50.00	3	50.00
Bernardston,	13	9	69.23	4	30.77
Braintree,	9	4	44.44	5	55.56
Second inspection,	4	1	25.00	3	75.00
Third inspection,	10	5	50.00	5	50.00
Burlington,	3	2	66.67	1	33.33
Second inspection,	10	9	90.00	1	10.00
Third inspection,	14	13	92.86	1	7.14
Easthampton,	29	5	17.24	24	82.76
Second inspection,	1	–	–	1	100.00
Gill,	6	1	16.67	5	83.33
Second inspection,	5	2	40.00	3	60.00
Hudson,	11	11	100.00	–	–
Second inspection,	7	4	57.14	3	42.86
Third inspection,	2	2	100.00	–	–
Fourth inspection,	1	–	–	1	100.00
Lenox,	3	2	66.67	1	33.33
Second inspection,	5	2	40.00	3	60.00
Third inspection,	2	2	100.00	–	–
Leyden,	26	6	23.08	20	76.92
Medford,	9	9	100.00	–	–
Second inspection,	4	4	100.00	–	–
Third inspection,	5	4	80.00	1	20.00
Fourth inspection,	1	1	100.00	–	–
Montague,	16	8	50.00	8	50.00
Second inspection,	2	–	–	2	100.00
Stoneham,	14	9	64.29	5	35.71
Second inspection,	15	13	86.67	2	13.33
Third inspection,	9	8	88.89	1	11.11
Fourth inspection,	2	2	100.00	–	–
Stow,	31	26	83.87	5	16.13
Second inspection,	4	4	100.00	–	–
Third inspection,	19	16	84.21	3	15.79
Sunderland,	18	5	27.78	13	72.22
Westhampton,	7	4	57.14	3	42.86
Winchester,	2	2	100.00	–	–
Second inspection,	1	–	–	1	100.00
Third inspection,	7	7	100.00	–	–
Woburn,	34	19	55.88	15	44.12
Second inspection,	4	3	75.00	1	25.00
Third inspection,	4	2	50.00	2	50.00
Fourth inspection,	1	1	100.00	–	–

Total number of dairies examined,	392
Number found to be free from objectionable conditions,	241
Number concerning which letters were sent,	151
Total number of conditions to which attention was called,	568
Percentage of dairies which passed inspection,	61.47

In addition to the above, 100 dairies were visited at which the sale of milk had been discontinued.

Included in the total number of dairies visited were 246 which had recently started in the milk-producing business and were inspected for the first time.

In the towns of New Marlborough, Otis and Sandisfield it was found that the milk produced was not marketed as such, but was turned into butter. Also, included in the number of dairies examined in Leyden and Montague 17 dairies and 3 dairies respectively produced butter only.

The names of the owners of the dairies found to be worthy of commendation follow: —

Arlington.

Class B.

Allen, F. J.
Balmer, J. E.*
Barry, Daniel ‡ †
Barry, Richard
Buckley, Dennis
Dickson, Joseph
Dolloff, L. M.
Flynn, David
Hutchinson, W. K.‡
Kimball, Edw.
McAnarny, Thomas
Murray, Robert J.‡ ||
Ryan, Timothy
Stiles, Wm. R.

Bernardston.

Class B.

Barber, C. S.
Bitzer, Fred G.
Chapin, Mrs. David
Frary, G. W.
Hale, E. B.
Hale, E. W.
Hale, Lanson
Pratt, C. D.
Root, W. H.

Braintree.

Class B.

Chandler, F. L.
Emery, John
Evans, John J.
Hunt Brothers ‡ ||
Matthews, Charles W.* †
Nelson, Charles M.‡
Sanford, Andrew ‡
Sanford, F. H.‡ ||
Sellar, Peter
Sullivan, M. L.‡

Burlington.

Class B.

Bennett, E. A.* †
Bennett, Geo. H.*
Bustead, James *
Davies, E. E.
Dinsmore, G. W.*
Gilligan, James T.
Graham, John H.‡
Graham, William ‡
Hawkins, C. W.‡
Manning, Clark M.‡ ||
McIntire Brothers ‡ ||
McIntyre, George * †
Nassano & Moglia *
O'Brien, C. E.‡
Pattison, James *
Ray & Hammond ‡
Reed, T. I.‡ ||
Richardson, Fred E.* †
Skelton, Walter W.‡ †
Taylor, Est. of J. H.‡
Walker, F. F.* †
Winn, John G.‡
Winn, Est. of Mrs. Martha ‡
Winn, Mrs. William H.‡

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
|| Reported favorably on all previous inspections.

Easthampton.

Class B.

Hannon, William H.
Slater, Merrill D.
Smith, H. E.
Taylor, Henry
Tiffany, Homer M.

Gill.

Class A.

Stoughton, Elizabeth * †

Class B.

Bell, Louie K.
Sheble, John *

Hudson.

Class B.

Barnard, Charles ‡
Biglow, C. H.
Birmingham, R. J.
Brigham, Mrs. Ann
Chapley, Peter * †
Curley, Eugene
Darling, H. F.
Emery, Mrs. Geo. D.*
Fox, Charles F.
Glynn, Patrick
Griffin, Charles M.
Hall, Eugene J.* †
O'Brien, Thomas ‡
Rote, C. C.
Smith, P. S.
Stow, Arthur
Stratton, H.* †

Lenox.

Class B.

Clark, Charles
Dewey, Duane B.‡
Freiderick, Jacob *
Greenfield, Max
Pelton, G. S.*
Wellington, Marshall ‡

Leyden.

Class B.

Johnson, Patr
Miner, M. D.
Phillips, A.
Severance, Herman W.
Severance, S. C., & Son
Tefft, C. A., & Son

Medford.

Class B.

Brewster, W. H.
Bultken, Louis H.* †
Chandler, F. E.§ †
Dwyer, J. F.
Fitzgerald, P. J.
Gates, G. J.*
Mahoney, E. E.
Max, Thomas
McGarry, James
McGrath, Thomas
Mulkerin, J. J.‡ ‖
O'Brien, Wm. S.
Rideout, Frederick B.* †
Rooney, Mrs. Mary
Schofield, C. A.*
Tainter, A. H.‡
Trainor, E. D.‡ †
Willis, H. E.‡ ‖

Montague.

Class A.

Burnham, A. C.

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
‖ Reported favorably on all previous inspections.

Class B.

Ball, J. R., & Son
Bartlett, L. T.
Dean, Fred
Dessureault, F. L.
Fournier, J. F.
Shirtcliff, J. F.
"Town Farm"

STONEHAM.

Class B.

Archer, E. W.
Arnold, C. H.* †
Barton, G. F.* †
Brown, Mrs. C. H.* †
Chandler, F. E.*
Doherty, Michael * †
Drew, Geo. S.
Fallon, W. J.‡
Forrest, John ‡
Gove, L. L.
Haley, James
Hall, Fred L.‡ ||
Hanson, E. E.
Hill, Levi ‡
Holden, J. W.§
Hylan, J. P.*
Jones, F. R.‡
Kenney, Mrs. M.* †
McGaffigan, Owen * †
McPhee, Arthur *
Meegan, T. Henry
Outram, A. W.‡
Parker, W. B.* †
Perry, G. E.*
Phinney, Mrs. L. M.
Richardson, F. A.
Sornberger, D. G.
Steele, Walter §
"Town Farm" ‡
Vondrathen, Henry * †
Weston, Fletcher B.* †
Whitcomb, W. W.‡

STOW.

Class B.

Davidson, Geo. H.‡
Dudley, Joseph ‡
Erikson, Hans
Everett, H. C.‡
Fitzgerald, D. A.‡
Fletcher, C. D.
Fors, A. E.
Gately, J. J.
Geers, O. H.‡
Goddard, G. E.
Golding, Mrs. Clara
Hale, Frank W.
Hallock, F. R.‡ ||
Larsen, Peter
Lyons, Read
Maynard, F. D.‡
McGuire, Frank
McLean, Lamont
Moore, J. D.‡
Murdock, Charles H.
Neilson, Hans
Nelson, Mrs. Theodore
Otterson, John
Parker Brothers * †
Peck, John
Peck, Samuel O.‡
Riley, Miss M. J.
Shirland, Charles F.
Smith, Geo. A.
Stephenson, John ‡
Sundberg, S. P.‡
Taylor, J. C.
Tebbets, Edwin N.
Teele, Geo. A.*
Thompson, Moses
"Town Farm" ‡
Vance, S.‡
Warren, E. A.‡
Warren, Henry H.‡ ||
Wetherbee, A. H.*
Wetherbee, C. A.‡ ||
Whidden, Ralph
Whitcomb, A. L.
Whitcomb, Fred S.*
Wright, C. A.
Yapp, Charles

SUNDERLAND.

Class B.

Mitchell, John
Pomeroy, Charles H.
Warner, Chester
Warner, L. C.
Welsch, Thomas M.

WESTHAMPTON.

Class B.

Bridgman, Dwight S.
Bridgman, F. D.
Clapp, Henry M.
Parsons, Mahlon K.

* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

WINCHESTER.

Class B.

Bellville, J. E.
Brooks, Mrs. Robert B.‡
Bryer, Mrs. Rubey M.‡
Chandler, Frank E.‡ †
Foss, F. N.
Richardson, W. G.‡
Schneider, Wm.‡
Thompson, Stephen ‡ ||
Thornton, J. D.‡

WOBURN.

Class B.

Ashbie, A. H.* †
Bowser, Frank C.
Bowser, Fred H.§
Cadwell, C. H.
Clark, C. C.
Crombie, H. S.
Day, John
Dobbins & White
Doherty, Hugh
Doherty, Patrick
Dwyer, Elmer F.
Foster, Geo. H.‡ ||
Froberg, Ludvig
Harris, F. B.
Headbloom, Carl
Johnson, John G.
Marion, N. H.
Martin, Hugh
McDevett, Michael *
Morton, Mrs. Louise A.
Murphy, A. F.*
Pushee, Frank M.‡ ||
Quirk, Mrs. Eliza
Struak, Samuel
Wiggen, James B.

PROPRIETARY PREPARATION ADVERTISED AS UNSALABLE AT RETAIL, IN MARCH, 1913.

Bracer: artificial wild cherry, flavored and colored, straight or mixed. (No statement as to presence of alcohol.)

STOMOXYS CALCITRANS LINN.: A NOTE GIVING A SUMMARY OF ITS LIFE HISTORY.

BY M. B. MITZMAIN, ENTOMOLOGIST, BUREAU OF AGRICULTURE, PHILIPPINE ISLANDS.

The recent findings of laboratory workers concerning the possibility of the transmission of poliomyelitis by the stable fly, *Stomoxys calcitrans,* makes of interest the life history of this insect. An account of my two years' experience with this fly has been prepared for publication elsewhere. The following, however, is a brief summary giving the essential features: —

SUMMARY OF FACTS ESTABLISHED.

1. The age at which the female begins egg laying has been determined in bred flies as the ninth day.

2. The maximum number of eggs produced by a single Stomoxys may be placed at, at least, 632 and possibly 820. As many as 20 depositions

* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

are made in the lifetime of a female. The maximum number of eggs deposited at one period was found to be 94.

3. The incubation period for these eggs is twenty to twenty-six hours at a temperature of 29° C. to 31° C.

4. The larval stage under favorable conditions is usually seven to eight days.

5. The imago emerges from the puparium generally in five days.

6. The fly of either sex takes its initial bite in six to eight hours after emergence from the puparium. Flies of this species have been observed to feed experimentally on 17 species of vertebrates including man, reptile, bird and rodent.

7. It has been demonstrated that in feeding on live stock Stomoxys probes a wound with its labium from which nonbiting flies draw blood. Surra organisms have been demonstrated in the mouth parts and stomachs of house flies used in experiments in this connection.

8. In considering the longevity of *Stomoxys calcitrans* it has been determined that a female can live a maximum of at least seventy-two days and a male a period of ninety-four days.

9. The life cycle of calcitrans, as seen by the following chart, varies considerably according to the treatment the young forms receive. Under optimum conditions this is a period of twelve days, but under unfavorable surroundings in light and absence of moisture, the life cycle may be extended to thirty-five days.

Life History of Stomoxys Calcitrans Linn. at Various Periods under Favorable and Unfavorable Conditions.

Date of Oviposition.	Incubation Period (Days).	Larva Stage (Days).	Pupa Stage (Days).	Life Cycle (Days).	Conditions of Development.
February 7,	2	26	6	35	Medium of dry horse manure left in light of the room.
February 17,	2	14	7	23	– – –
February 23,	2	11	6	19	Medium of dry horse manure left in light of the room.
February 23,	1	13	5	19	Medium of dry horse manure left in light of the room.
April 7,	2	14	6	22	Medium of dry horse manure left in light of the room.
June 14,	1	8	5	14	Medium of moist horse manure and corn meal.
August 10,	1	9	5½	15½	Medium of moist horse manure and bran.
October 1,	1	7	5	13	Medium of moist guinea-pig manure mixed with chopped guinea grass.
October 12,	1	9	5	[1] 15	Medium of moist horse manure and layers of filter paper.
October 23,	1	6	5	12	Medium of carabao and horse manure placed in a barrel shaded at all hours, outdoors.

[1] From this brood several flies emerged one month after egg laying.

Note. — The last five cultures but one were developed in open jars in an airy closet, darkened in all hours at a temperature of an average of 30° C.

PUBLIC HEALTH ADMINISTRATION: ITS DEPENDENCE UPON REPORTS OF CASES OF SICKNESS.[1]

By John W. Trask, Assistant Surgeon General, United States Public Health Service.

The accomplishment of effective public-health work depends largely upon the use of information obtained from the notification of cases of the preventable diseases. Adequate notification shows the occurrence, prevalence and geographic distribution of these diseases, and without this knowledge attempts at their control are to varying degrees ineffective, and the proper protection of the health of the community is impossible.

Originally the duties of the health officer were very simple, and related only to the control of certain diseases associated with popular dread. As knowledge, however, of the causes of diseases and their means of spread has been acquired, the responsibilities of the health department have rapidly increased, so that at the present time the health department is properly the guardian of the community's health in so far as health can be conserved by the prevention or control of disease.

Only those diseases may be properly classed as preventable or controllable of which something is known of the cause or means of spread. Given this knowledge, the first and essential step in their prevention or control is the securing of information of the occurrence and location of the factors that produce disease and of the foci from which disease may spread. Of the communicable diseases a knowledge of the existence and location of cases is necessary, as each such case constitutes a focus from which the disease may spread. Of the diseases that are preventable but not communicable, a knowledge of the occurrence of cases and of the conditions under which they are occurring is necessary, as it shows the existence of the conditions which produce these diseases. This knowledge can be obtained only when the occurrence of cases is made known to some authority — that is, when cases are reported. Any attempt at the prevention of disease will be at best incomplete and in large measure a makeshift unless it is based upon a knowledge of the occurrence and prevalence of disease.

The health department in a community is able to control disease in proportion to the completeness and exactness of its knowledge of the occurrence of cases. With full information of existing cases it can work effectively; it can direct its efforts at prophylaxis against the disease

[1] Reprinted from United States Public Health Reports, Jan. 3, 1913.

itself; it can work in the light of knowledge of the situation. Without such information its attempts at control must be of a general nature, sometimes effective, more often not, for it is working in the darkness of ignorance of the location and prevalence of that which it is attempting to control — as well hunt birds by shooting into every green bush, a practice that would cost much in ammunition and yield but poor results. If they are not reported there may be hundreds of cases of typhoid fever or infantile paralysis or scarlet fever or smallpox in a locality, and the health officer not be aware that there are any present.

Tuberculosis is a communicable disease. With the exception of the relatively small proportion of cases contracted through milk from diseased cows each case is contracted directly or indirectly from some pre-existing human case. To control this disease effectively it is necessary that each case be known to the health department so that it may ascertain that the patient is not unnecessarily exposing others to infection. Tuberculosis is usually chronic in nature, and those affected frequently remain for months and sometimes years a focus from which the infection may spread to others. To control this disease the health department should make sure that the patients understand how to so conduct themselves that others may not be infected, and that those associated with the sick know the manner in which the disease is spread and how to protect themselves from it. Then, too, the health department should know of those suffering from tuberculosis, as those so affected, for the protection of the community, should not engage in certain occupations in which they would be especially apt to spread the disease.

Typhoid fever is another disease in which the health department should be informed of the occurrence of each case. Every case of typhoid fever has potential possibilities for harm to the community through the contamination of water, milk or other food supply. A knowledge of all cases is necessary for the protection of others, for each case is a focus from which, under suitable conditions, an outbreak may arise. When there are a number of cases of this disease, there is usually some one or more sources from which it is being spread, and it is only when cases are reported that the health department can ascertain their relationship to each other or their common source of infection when such exists. It is only through the notification of cases that outbreaks due to infected milk or the infection of a common water supply can be recognized and proper remedies applied or that typhoid-bacillus carriers can be traced and controlled.

Scarlet fever is another common disease in which the need for the notification of cases is universally understood. Every case of this disease comes from some pre-existing case. No community would expect

and no health department would attempt to control this disease in the absence of the notification of the cases that were occurring. The same is true of plague, yellow fever and cholera. There are many other diseases, however, in which the importance of the reporting of cases has not been generally appreciated, but in which the necessity is just as great if they are to be prevented. The necessity for notification exists in all preventable diseases. Their causes or methods of spread may be different and the measures necessary to prevent them may vary, but the notification of the occurrence of cases is essential in all for their successful control. The health department cannot prevent the spread of diseases of the existence of which in the community it is unaware.

For purposes of public health administration, cases of the communicable diseases may be divided into four groups, namely: first, the well-marked cases; second, the mild, concealed cases; third, the mild unrecognized cases; and fourth, the well, or apparently well, carriers. To prevent the spread of these diseases control of all four groups is necessary. The control of only the first group by quarantine or other means, a practice by no means uncommon, is of little value in preventing the spread of these diseases, as the well-marked cases usually come less in contact with others than do the cases of the other groups, and are likely, therefore, to be less potent factors in spreading infection. The well-marked cases are presumably usually reported. The mild cases should also be reported. The notification of the cases in the first two groups should enable a well-organized health department to discover most of those in the other two by a careful study of the conditions under which the reported cases occur. To find the unrecognized cases and carriers, to which is largely due the spread of the communicable diseases, is a prime duty of the health officer. The accomplishment of this requires intelligence and watchfulness and will be possible in proportion to the completeness with which the recognized cases are reported.

But the health department of a city, township or county needs to know not only of the occurrence and prevalence of disease in its own jurisdiction, but also of the prevalence of disease in neighboring cities, towns, and counties, so that it may be informed of the possibility of the introduction of disease from other communities. The prevalence of infectious diseases in every city and county has an important bearing on the welfare of every other city and county in a State. In a well-organized State, therefore, the local health authorities keep the State health department currently informed of the prevalence of disease in their respective jurisdictions, that the information may be made available to the various local authorities and that the State department, acting in its broader field as the agent and representative of all localities and all the people,

may perform its proper functions in the prevention and control of disease. Without the information of the prevalence and geographic distribution of disease obtainable in this way the State health department will remain in ignorance of the sanitary condition of the State, and, because of this lack of knowledge, will be unable to perform its proper functions and will therefore constitute a health department largely in name only.

In addition, a State health department needs for the proper performance of its functions a knowledge of the prevalence of disease more extensive than that of its own State. It needs to know of the prevalence of disease in neighboring States, and even in those more remote. It is as necessary that one State should know of the prevalence of disease in other States as that a city should know of the prevalence of disease in surrounding communities. Therefore, to complete the usefulness of the health organization it is important that the States report to some national agency the occurrence of disease in their various jurisdictions, that the information may be made available to the several States, and that the national health service, acting as the representative of all the States, may, when occasion arises, perform those functions with which it has been intrusted and for which it has been made responsible. A resolution providing for reports of this kind by the States for the purpose of making available current information of the prevalence and geographic distribution of the notifiable diseases was adopted in June, 1912, by the State and Territorial health authorities in conference with the United States Public Health Service.[1]

Thus it is apparent that the notification of cases of the preventable and controllable diseases is the only satisfactory foundation upon which public-health work — local, State or national — can be builded. There is no other foundation upon which work that will yield a proper return for the amount expended can rest, nor is there likely to be for a long time to come. Public-health work based upon the knowledge furnished by the notification of cases is not only the only rational and effective work, but is the only one that gives results commensurate with the outlay and effort made.

A discussion of either public health organization or the notification of disease — morbidity reports — would be incomplete without a consideration of the relation of the practicing physician to the subject. The person responsible in most cases for the reporting to the proper authorities of the occurrence of cases of the notifiable diseases is necessarily the practicing physician who first comes in contact with such cases. The practicing physician constitutes the picket of the health organization, the sentinel who must give the first notice of the presence of disease and upon

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[1] See United States Public Health Reports, Vol. XXVII., No. 23, June 7, 1912, p. 895.

whom rests the responsibility of discovering and reporting new cases as they occur. The practicing physician, therefore, constitutes in reality an essential part of any plan of health administration.

The physician is engaged in a work which places him in a position of especial and peculiar responsibility to the community, a work which carries with it moral and usually statutory obligations, upon the proper fulfillment of which depends to a large degree the ability of the health department to perform its functions. The requiring of those desiring to practice to pass an examination and to be duly licensed and registered is a partial recognition of this, and presumably such licenses are given on the assumption that the recipient will comply with the requirements imposed upon physicians by law, among which is invariably the duty of reporting cases of certain diseases coming to his knowledge. The physician who does not comply with such statutes not only places himself in the class of those who violate the law, but shows himself indifferent to his moral obligations as they affect the welfare of the community. It would be well to give more definite recognition to the relationship the physician holds to the health department and to the community. Such recognition would undoubtedly be agreeable to physicians and bring them into closer co-operation with the health authorities in whose jurisdictions they practice.

The citizen also should co-operate with the health department. The individual who objects to complying with the requirements regarding the notification of disease when they apply to himself or his household cannot expect his neighbors or associates to report the cases in their families. The moral obligation of the individual to his neighbors and the community is such that he should make the same effort to protect them from his illnesses as he expects them to make to protect him. The health officer needs the assistance of the people at least to the extent of complying with the health laws, and the requirements for the notification of sickness are among those to which especial attention should be paid. The health officer is the servant of the community. He is the one employed by the people to look after their health interests, taken in the aggregate. It is no more rational to employ a health officer and then not give him every facility and assistance for accomplishing the things for which he has been employed than it would be to hire a gardener and then not supply him with tools.

As the local health department expects to have cases of the notifiable diseases reported to it by physicians, so it should give every assistance to the State health department by keeping the State department informed of the sanitary status and occurrence of disease in its local jurisdiction. If there is law or regulation requiring the city, town or county

authorities to notify the State, this is sufficient reason. In the absence of law, however, the importance of the matter, and the fact that both State and local health departments are working for a common end, is sufficient reason why the local authorities should give all possible assistance to the State, and especially should report the occurrence of the preventable diseases in so far as it has the information. No city can be so large nor its health department so efficient that it is relieved of this obligation. The larger the city and the better equipped its health department the greater the obligation to the State, just as the more influential and prominent the citizen the greater his obligations to the community. The local health department that does not co-operate with the State authorities has but little moral right to expect the citizens within its jurisdiction to render to it any assistance beyond that insisted upon by the courts or inspired by fear of fines or imprisonment. The local health department and its jurisdiction are to the State department what the individual and his household are to the local department.

On the other hand, the State, too, in so far as the control and prevention of disease is concerned, is but a unit. Disease is no more a respecter of State boundaries than it is of those of counties or municipalities. It ignores such boundaries established by man. What the household is to the municipality, and the city and county to the State, the State is to the Nation.

With the several States alone responsible under the Constitution for the sanitary conditions and public-health administration within their respective boundaries in so far as these do not affect the welfare of other States, and with a large part of this responsibility in many instances delegated by the States to local authorities, a comprehensive plan of public-health administration will need to be one of co-operation. Within the States it will need to be one of co-operation of the local authorities acting with and through the State health departments, and for the Nation a co-operation of the State health authorities with the Federal Public Health Service.

AMENDMENT TO INTERSTATE QUARANTINE REGULATIONS.[1]

Pure Drinking Water for Passengers in Interstate Traffic.

Treasury Department, Office of the Secretary,
Washington, Jan. 25, 1913.

To Medical Officers of the Public Health Service, State and Local Health Authorities and Others concerned.

The following amendment is hereby made to the Interstate Quarantine Regulations promulgated by this department Sept. 27, 1894, and amended Aug. 17, 1905, June 24, 1909, May 15, 1912, Oct. 30, 1912, and Dec. 9, 1912, said amendment and regulations being in accordance with section 3, act of Congress approved Feb. 15, 1893.

Article 3, General Regulations, is hereby amended by the addition of the following paragraph: —

Paragraph 15. Water provided by common carriers on cars, vessels, or vehicles operated in interstate traffic for the use of passengers shall be furnished under the following conditions: —

(*a*) Water shall be certified by the State or municipal health authority within whose jurisdiction it is obtained as incapable of conveying disease: *provided,* That water in regard to the safety of which a reasonable doubt exists may be used if the same has been treated in such a manner as to render it incapable of conveying disease, and the fact of such treatment is certified by the aforesaid health officer.

(*b*) Ice used for cooling such water shall be from a source the safety of which is certified by the State or municipal health authority within whose jurisdiction it is obtained, and before the ice is placed in the water, it shall be first carefully washed with water of known safety, and handled in such manner as to prevent its becoming contaminated by the organisms of infectious or contagious diseases: *provided,* That the foregoing shall not apply to ice which does not come in contact with the water which is to be cooled.

(*c*) Water containers shall be cleansed and thoroughly scalded with live steam at least once in each week that they are in operation.

FRANKLIN MacVEAGH,
Secretary.

NEW LEGISLATION.

Acts of 1913, Chapter 210.

An Act to provide for the reporting of deaths from diseases dangerous to the public health.

Be it enacted, etc., as follows:

The board of health in cities, and in towns, the board of health, or, when no such board is chosen, the selectmen acting as a board of health, shall send to the state board of health every week a report of the deaths in their city or town, for the week ending Saturday noon, from all diseases declared by the state board of health to be dangerous to the public health, upon forms to be prescribed by said state board. [*Approved February 28, 1913.*

[1] Reprinted from United States Public Health Reports, Jan. 31, 1913.

Acts of 1913, Chapter 265.

An Act relative to the manufacture, sale or exchange of confectionery deleterious to the public health.

Be it enacted, etc., as follows:

Whoever himself, or by his agent or servant, or as the agent or servant of another person or corporation, manufactures, sells or exchanges, or has in his custody or possession with intent to sell or exchange, or exposes or offers for sale or exchange, any confectionery containing or coated wholly or in part with terra alba, barytes, paraffine, talc, chrome yellow, or other injurious mineral substance or poisonous color or flavor, or other ingredient deleterious or detrimental to the public health, shall be punished by a fine of not less than fifty nor more than one hundred dollars. [*Approved March 8, 1913.*

Acts of 1913, Chapter 272.

An Act relative to the adulteration of drugs.

Be it enacted, etc., as follows:

The first paragraph of section eighteen of chapter seventy-five of the Revised Laws, is hereby amended by striking out the words "falls below", in the eleventh line, and inserting in place thereof the words: — differs materially from, — so that the said first paragraph will read as follows: — A drug shall be deemed to be adulterated: 1. If, when sold under or by a name recognized in the United States pharmacopœia, it differs from the standard of strength, quality or purity prescribed therein, unless the order therefor requires an article inferior to such standard or unless such difference is made known or so appears to the purchaser at the time of the sale. 2. If, when sold under or by a name not recognized in the United States pharmacopœia but which is found in some other pharmacopœia or other standard work on materia medica, it differs materially from the standard of strength, quality or purity prescribed in such work. 3. If its strength, quality or purity differs materially from the professed standard under which it is sold. [*Approved March 8, 1913.*

Acts of 1913, Chapter 328.

An Act to authorize counties to establish and maintain or to provide bacteriological facilities.

Be it enacted, etc., as follows:

Section 1. For the better preservation of the public health and for the purpose of securing greater accuracy in the diagnosis of communicable diseases, county commissioners are hereby authorized to establish and maintain bacteriological laboratories, or to provide such laboratory facilities for their respective counties, from time to time, as may be deemed advantageous by them, and for this purpose may expend such sums as may be necessary from the treasury of the county.

SECTION 2. No expenditures shall be made under the provisions of this act until the laboratories or the laboratory facilities established or provided in accordance herewith have been inspected and approved by the state board of health.

SECTION 3. This act shall take effect upon its passage. [*Approved March 21, 1913.*

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MONTHLY BULLETIN

OF THE

STATE BOARD OF HEALTH

OF

MASSACHUSETTS.

An official publication of the State Board of Health of Massachusetts, issued monthly from the office of the Board, 145 State House, Boston, Mass.

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1913.

TABLE OF CONTENTS.

Approved by
The State Board of Publication.

RETURNS OF DISEASES.

Cases of Diseases declared by the State Board of Health to be Dangerous to the Public Health.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending—				
	Apr. 5.	Apr. 12.	Apr. 19.	Apr. 26.	Total.
Diphtheria,	129	148	127	126	530
Measles,	1,473	1,184	1,188	1,487	5,332
Scarlet fever,	166	223	176	213	778
Typhoid fever,	22	24	22	34	102
Tuberculosis, pulmonary (or not classified),	165	142	147	178	632
Tubercular meningitis,	2	3	10	4	19
Tuberculosis, other forms,	10	7	4	14	35
Cerebro-spinal meningitis,	8	1	5	5	19
Whooping cough,	81	75	85	95	336
Varicella,	103	108	83	90	384
Ophthalmia neonatorum,	43	45	31	51	170
Anterior poliomyelitis,	2	–	–	–	2
Smallpox,	6	1	8	5	20
Trachoma,	6	4	2	–	12
Tetanus,	–	–	1	1	2
Malignant pustule,	–	–	–	1	1

Cases of Infectious Diseases not included in the Above Table.

[Cases not notifiable under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending —				
	Apr. 5.	Apr. 12.	Apr. 19.	Apr. 26.	Total.
Mumps,	8	7	10	18	43
Erysipelas,	–	–	1	–	1
Syphilis,	–	1	–	–	1

Note. — These totals are somewhat too high, as some cases are reported twice. For example, a case may be reported first by the home town and again by a neighboring town to which it has gone for treatment.

RETURNS OF DEATHS.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health.

[Under the provisions of chapter 210, Acts of 1913.]

Week ending April 5, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tubercular Meningitis.	Tuberculosis, other forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	32[1] 36[2]	20[1] 23[2]	2[1] 2[2]	2[1] 2[2]	3[1] 3[2]	– –	– –	3[1] 4[2]	2[1] 2[2]	– –
Worcester,	145,986	2	1	–	1	–	–	–	–	–	–
Fall River,	119,295	7	3	–	2	–	–	1	–	1	–
Lowell,	106,294	4	–	–	1	–	–	–	1	1	1
Cambridge,	104,839	7	7	–	–	–	–	–	–	–	–
New Bedford,	96,652	3	–	–	1	1	–	–	–	–	1
Lynn,	89,336	–	–	–	–	–	–	–	–	–	–
Springfield,	88,926	2	2	–	–	–	–	–	–	–	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	2	1	–	1	–	–	–	–	–	–
Holyoke,	57,730	3	1	–	1	1	–	–	–	–	–
Brockton,	56,878	3	2	–	1	–	–	–	–	–	–
Malden,	44,404	2	–	–	–	1	–	–	–	–	1
Haverhill,	44,115	2	–	–	–	–	–	–	2	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	7	–	–	2	–	–	5	–	–	–
Fitchburg,	37,826	2	1	–	–	–	–	–	1	–	–
Taunton,	34,259	1	1	–	–	–	–	–	–	–	–
Everett,	33,484	1	1	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	–	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	2	–	–	1	–	–	1	–	–	–
Waltham,	27,834	1	1	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	1	1	–	–	–	–	–	–	–	–
Gloucester,	24,398	1	1	–	–	–	–	–	–	–	–
Medford,	23,150	1	–	–	–	1	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	1	–	–	1	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	2	1	–	1	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	3	2	–	1	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	–	–	–	1	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	1	1	–	–	–	–	–	–	–	–
Clinton,	13,075	1	–	1	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	2	1	–	1	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,016,049	101	51	3	17	8	–	7	8	4	3

[1] Nonresidents deducted. [2] Total deaths.

Week ending April 12, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tubercular Meningitis.	Tuberculosis, other forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	28[1] 29[2]	15[1] 16[2]	2[1] 2[2]	– –	4[1] 4[2]	–	–	2[1] 2[2]	3[1] 3[2]	2[1] 2[2]
Worcester,	145,986	5	3	–	1	1	–	–	–	–	–
Fall River,	119,295	15	5	–	–	2	–	2	5	1	–
Lowell,	106,294	5	2	–	–	1	–	1	–	–	1
Cambridge,	104,839	5	3	–	1	–	–	–	1	–	–
New Bedford,	96,652	5	2	–	1	2	–	–	–	–	–
Lynn,	89,336	4	3	–	–	–	–	1	–	–	–
Springfield,	88,926	7	2	–	4	1	–	–	–	–	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	4	3	–	–	–	–	–	1	–	–
Holyoke,	57,730	2	2	–	–	–	–	–	–	–	–
Brockton,	56,878	1	–	–	–	–	–	1	–	–	–
Malden,	44,404	2	–	–	–	1	–	–	–	–	1
Haverhill,	44,115	3	3	–	–	–	–	–	–	–	–
Salem,	43,697	2	2	–	–	–	–	–	–	–	–
Newton,	39,806	1	1	–	–	–	–	–	–	–	–
Fitchburg,	37,826	2	1	–	–	–	–	–	1	–	–
Taunton,	34,259	2	2	–	–	–	–	–	–	–	–
Everett,	33,484	3	2	–	–	–	–	1	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	–	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	3	1	–	1	–	–	1	–	–	–
Waltham,	27,834	2	1	–	1	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	–	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	1	–	–	1	–	–	–	–	–	–
Beverly,	18,650	1	1	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	1	1	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	1	1	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	1	1	–	–	–	–	–	–	–	–
Newburyport,	14,949	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	1	–	–	–	–	–	–	–	1	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	1	–	–	–	–	–	1	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,075,759	109	58	2	10	12	–	8	10	5	4

[1] Nonresidents deducted. [2] Total deaths.

Week ending April 19, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tubercular Meningitis.	Tuberculosis, other forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	{ 40[1] 48[2]	20[1] 24[2]	4[1] 6[2]	1[1] 1[2]	4[1] 4[2]	– –	4[1] 6[2]	5[1] 5[2]	1[1] 1[2]	1[1] 1[2]
Worcester,	145,986	5	2	–	2	–	–	–	–	–	1
Fall River,	119,295	3	1	–	–	–	–	1	1	–	–
Lowell,	106,294	2	–	–	–	–	–	–	1	–	1
Cambridge,	104,839	9	7	–	1	–	–	–	1	–	–
New Bedford,	96,652	4	2	–	–	1	–	–	–	–	1
Lynn,	89,336	–	–	–	–	–	–	–	–	–	–
Springfield,	88,926	5	2	–	1	1	–	1	–	–	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	2	–	–	1	–	–	–	1	–	–
Holyoke,	57,730	3	1	–	–	1	–	1	–	–	–
Brockton,	56,878	–	–	–	–	–	–	–	–	–	–
Malden,	44,404	1	1	–	–	–	–	–	–	–	–
Haverhill,	44,115	6	4	–	1	–	–	–	1	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	1	–	–	1	–	–	–	–	–	–
Taunton,	34,259	1	–	–	–	1	–	–	–	–	–
Everett,	33,484	1	1	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	2	2	–	–	–	–	–	–	–	–
Pittsfield,	32,121	1	–	–	1	–	–	–	–	–	–
Waltham,	27,834	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	1	1	–	–	–	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	1	–	–	–	–	–	–	–	–	1
Northampton,	19,431	1	1	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	2	–	–	–	2	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	–	–	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	1	–	–	1	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	2	1	–	1	–	–	–	–	–	–
Clinton,	13,075	1	–	–	–	–	1	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	3	–	–	–	–	–	3	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	1	–	–	–	–	–	–	–	–	1
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,893,941	107	50	6	11	10	1	12	10	1	6

[1] Nonresidents deducted. [2] Total deaths.

Week ending April 26, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tubercular Meningitis.	Tuberculosis, other forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	34[1] 37[2]	17[1] 19[2]	2[1] 3[2]	3[1] 3[2]	1[1] 1[2]	– –	5[1] 5[2]	4[1] 4[2]	2[1] 2[2]	– –
Worcester,	145,986	8	2	–	2	1	–	–	1	–	2
Fall River,	119,295	17[3]	1	1	1	–	–	4	8	1	–
Lowell,	106,294	5	4	1	–	–	–	–	–	–	–
Cambridge,	104,839	8	5	1	–	–	–	–	1	1	–
New Bedford,	96,652	5	3	1	–	–	–	–	–	–	1
Lynn,	89,336	9	6	–	1	–	–	1	–	1	–
Springfield,	88,926	1	–	–	1	–	–	–	–	–	–
Lawrence,	85,892	1	1	–	–	–	–	–	–	–	–
Somerville,	77,236	5	3	–	1	1	–	–	–	–	–
Holyoke,	57,730	5	1	–	–	–	–	1	1	2	–
Brockton,	56,878	3	1	1	1	–	–	–	–	–	–
Malden,	44,404	–	–	–	–	–	–	–	–	–	–
Haverhill,	44,115	–	–	–	–	–	–	–	–	–	–
Salem,	43,697	1	1	–	–	–	–	–	–	–	–
Newton,	39,806	1	1	–	–	–	–	–	–	–	–
Fitchburg,	37,826	1	–	–	–	–	–	–	–	1	–
Taunton,	34,259	4	2	1	–	–	–	1	–	–	–
Everett,	33,484	2	1	–	–	–	–	–	–	1	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	–	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	1	–	–	–	–	–	1	–	–	–
Waltham,	27,834	1	1	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	2	1	–	1	–	–	–	–	–	–
Gloucester,	24,398	2	–	–	1	1	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	2	2	–	–	–	–	–	–	–	–
Leominster,	17,580	1	–	–	–	1	–	–	–	–	–
Attleborough,	16,215	1	1	–	–	–	–	–	–	–	–
Westfield,	16,044	–	–	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	1	–	–	1	–	–	–	–	–	–
Newburyport,	14,949	1	1	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	3	1	–	–	–	–	2	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	1	1	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	1	1	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	2	1	–	–	1	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,142,609	132	61	9	13	6	–	15	15	9	3

[1] Nonresidents deducted. [2] Total deaths.
[3] Including one death from ophthalmia neonatorum.

REPORT ON INSPECTION OF FOOD AND DRUGS.

Laboratory Examinations of Food and Drugs.

The following summary presents the results of the laboratory examinations during the month of April, 1913, of samples of food and drugs collected by inspectors of the Board: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Baking powder,	2	–	2	Lard, . . .	3	–	3
Butter, . .	4	–	4	Maple sugar, .	40	12	52
Cocoa, . .	1	–	1	Maple syrup, .	3	–	3
Coffee, . .	–	1	1	Maté, . . .	1	–	1
Confectionery, .	6	1	7	Meat products: —			
Cream, . .	11	–	11	Hamburg steak, .	1	–	1
Cream of tartar,	2	–	2	Head cheese, .	1	–	1
Drugs, . .	158	27	185	Mince meat, .	–	1	1
Eggs, . . .	3	–	3	Pressed meat,	1	–	1
Flavoring extracts: —				Sausages, .	3	1	4
Lemon, . .	20	4	24	Milk, . . .	525	138	663
Vanilla, . .	5	2	7	Olive oil, . .	12	–	12
Wintergreen,	1	–	1	Shrimp, . .	–	2	2
Honey, . .	3	–	3				
Jams and jellies,	4	–	4	Total, .	810	189	999

The samples of drugs found to be adulterated were spirit of nitrous ether, spirit of wintergreen, spirit of lemon, spirit of peppermint and tincture of iodine.

The cities and towns in which samples were collected were: Arlington, Boston, Brockton, Cambridge, Chelsea, Clinton, Dalton, Everett, Framingham, Gardner, Holliston, Lexington, Lynn, Malden, Marlborough, Medford, Melrose, Milford, Natick, Palmer, Peabody, Pittsfield, Plymouth, Quincy, Reading, Somerville, Springfield, Stow, Taunton, Ware, Westfield, Westminster, Weymouth, Winchester, Worcester.

Prosecutions for Violations of the Law relating to Food and Drugs.

Six convictions were secured during the month of March, 1913, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Fred W. Sweatt, . .	Natick, .	Milk (total solids, 11.20).
2	Edward P. Corrigan, .	Malden, .	Milk (total solids, 10.62).[1]
3	Benjamin Hebert, . .	Acushnet, .	Milk (total solids, 10.06).[1]
4	Oscar D. Adams, Vermont Farmer Company.	Springfield, .	Maple sugar (60 per cent. maple sugar, 40 per cent. cane sugar).[2]
5	Oscar D. Adams, Vermont Farmer Company.	Springfield. .	Maple sugar, (60 per cent. maple sugar, 40 per cent. cane sugar).[2]
6	Oscar D. Adams, Vermont Farmer Company.	Springfield, .	Maple sugar (60 per cent. maple sugar, 40 per cent. cane sugar).[2]
7	Oscar D. Adams, Vermont Farmer Company.	Springfield, .	Maple sugar (60 per cent. maple sugar, 40 per cent. cane sugar).[2]
8	Oscar D. Adams, Vermont Farmer Company.	Springfield, .	Maple sugar (60 per cent. maple sugar, 40 per cent. cane sugar).[2]
9	Oscar D. Adams, Vermont Farmer Company.	Springfield, .	Maple sugar (60 per cent. maple sugar, 40 per cent. cane sugar).[2]
10	Hector Choiniere, . .	Ware, . .	Alcohol (75.01 per cent. U. S. P.).

[1] Watered. [2] Appealed.

Fines imposed, $440.

List of Adulterated or Improperly Labeled Foods.

The following shows the adulterated or improperly labeled foods, during the month of April, 1913: —

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
278–R	Gowing's Lemon Flavoring.	Gowing Extract Company, North Reading, Mass.,	Formula incorrect; contains 0.2 per cent. lemon oil; labeled, 2 per cent. lemon oil.
126–R	Lion Brand Lemon Extract.	Highland Drug and Chemical Company, Boston, Mass.	No lemon oil present.
20021	Saratoga Lemon Extract,	Saratoga Extract and Chemical Company, Saratoga, N. Y.	Contains 0.5 per cent. lemon oil.
2663–S	Holbrook's Extract of Lemon.	Holbrook & Co., Lynn, Mass.,	A solution of citral; no lemon oil present.
92–R	Horwood's Extract of Lemon.	William Horwood & Son, Malden, Mass.,	A solution of citral; no lemon oil present.
2809–S	Honest Lemon Flavor,	American Grocery Company, Boston, Mass.,	Formula incorrect; contains 0.16 per cent. citral; no lemon oil.
2665–S	Holbrook's Compound Extract of Vanilla.	Holbrook & Co., Lynn, Mass.,	Formula incorrect; contains 0.7 per cent. vanillin, 0.13 per cent. coumarin.
–	Non-alcoholic Vanilla Flavoring.	W. T. Kightlinger, Newark, N. J.,	Names and percentages of ingredients not stated on label; contains vanillin, coumarin and glycerine; colored with caramel.
q 10909	Milk,	Horace S. Blake, Ashland, Mass.,	Total solids, 10.56 per cent.; fat, 3.10 per cent.; contained added water.
q 10957	Milk,	John and Patrick Baker, Cambridge, Mass.,	Total solids, 10.47 per cent.; fat, 3.10 per cent.; contained added water.
q 10998	Milk,	Christ V. Simon, West Boylston, Mass.,	Total solids, 10.62 per cent.; fat, 2.90 per cent.; contained added water.
19957	Milk,	Harrison G. Kennard, Wollaston, Mass.,	Total solids, 11.20 per cent.; fat, 3.35 per cent.; contained added water.
19958			Total solids, 9.54 per cent.; fat, 2.90 per cent.; contained added water.
2957–S	Milk,	Harvey B. Savery, Pittsfield, Mass.,	Total solids, 11.23 per cent.; fat, 4.00 per cent.; contained added water.
2959–S			Total solids, 10.58 per cent.; fat, 3.60 per cent.; contained added water.

3003–S	Milk,	Charles Benz, Pittsfield, Mass.,	Total solids, 11.09 per cent.; fat, 3.40 per cent.; contained added water.
3005–S	Milk,	Charles Benz, Pittsfield, Mass.,	Total solids, 10.00 per cent.; fat, 3.10 per cent.; contained added water.
3007–S	Milk,	John C. Benz, Pittsfield, Mass.,	Total solids, 10.82 per cent.; fat, 3.30 per cent.; contained added water.
3009–S	Milk,	John C. Benz, Pittsfield, Mass.,	Total solids, 11.28 per cent.; fat, 3.50 per cent.; contained added water.
20029	Milk,	Albertus H. Ballou, Ware, Mass.,	Total solids, 10.57 per cent.; fat, 3.00 per cent.; contained added water.
20031	Milk,	Albertus H. Ballou, Ware, Mass.,	Total solids, 7.36 per cent.; fat, 2.00 per cent.; contained added water.
120–R	Milk,	G. Edward Winn, Woburn, Mass.,	Total solids, 12.44 per cent.; fat, 3.05 per cent.; proteins, 3.52 per cent.; skimmed milk.
208–R	Milk,	Lawrence A. Baker, Pittsfield, Mass.,	Total solids, 11.48 per cent.; fat, 2.70 per cent.; proteins, 3.15 per cent.; skimmed milk.
q 11058	Milk,	Paul Cunningham, Bolton, Mass.,	Total solids, 11.32 per cent.; fat, 2.70 per cent.; proteins, 3.03 per cent.; skimmed milk.
19950	Milk,	Harrison G. Kennard, Wollaston, Mass.,	Total solids, 11.84 per cent.; fat, 2.90 per cent.; proteins, 3.38 per cent.; skimmed milk.
19951	Milk,	Harrison G. Kennard, Wollaston, Mass.,	Total solids, 12.04 per cent.; fat, 2.65 per cent.; proteins, 3.62 per cent.; skimmed milk.
20001	Milk,	Harrison G. Kennard, Wollaston, Mass.,	Total solids, 11.96 per cent.; fat, 2.25 per cent.; proteins, 3.43 per cent.; skimmed milk.
338–R	Sweet Spirits of Nitre,	Roy E. Mayo, Gardner, Mass.,	74 per cent. U. S. P. strength.
q 10983	Sweet Spirits of Nitre,	Sawyer Drug Company, Boston, Mass.,	11.3 per cent. U. S. P. strength.
q 10895	Sweet Spirits of Nitre,	Boyajian's Pharmacy, Boston, Mass.,	63 per cent. U. S. P. strength.
q 11124	Sweet Spirits of Nitre,	C. W. Freeman, Chelsea, Mass.,	63.5 per cent. U. S. P. strength..
2729–S	Sweet Spirits of Nitre,	T. Gorman, Marlborough, Mass.,	Not U. S. P. strength; practically no ethyl nitrite present.
2695–S	Tincture of Iodine,	Burke Drug Company, Marlborough, Mass.,	52 per cent. U. S. P. strength.
2697–S	Spirit of Peppermint,	Burke Drug Company, Marlborough, Mass.,	66 per cent. U. S. P. strength.

QUARTERLY REPORT ON COLD STORAGE.

During the months of January, February and March, 1913, the licensed cold-storage or refrigerating warehouses in the State were examined several times by inspectors of the State Board of Health, and most of them were found to be in good sanitary condition. At several of the warehouses it was necessary to make suggestions for cleanliness and sanitation; these were immediately complied with and conditions made satisfactory.

The inspectors condemned and confiscated a number of articles at the warehouses on account of decomposition; also, as being otherwise unfit for food and disposed of them as per summary below.

The following table shows the quantities of articles of food placed in cold storage during the three months preceding the first day of April, 1913, also the quantities of butter and eggs held on the first day of April, 1913, as follows: —

Articles placed in Cold Storage.

Articles.	Cases.	Dozens.	Packages.	Pounds.
Eggs, case,	6,723	201,690	–	–
Eggs, broken,	16	–	60	121,044
Butter,	13	–	16,189	845,842
Poultry,	7	–	16,768	3,799,849
Game,	23	157	535	4,992¼
Meat, fresh,	68	–	15,577	1,991,393
Meat products, fresh (except in process of manufacture),	–	–	3,217	1,135,669
Fish, fresh food,	87	–	123	2,372,766
Totals,	6,937	201,847	52,469	10,271,555¼

Butter and Eggs held.

Articles.	Cases.	Dozens.	Packages.	Pounds.
Eggs, case,	3,366½	97,215	–	–
Eggs, broken,	–	–	43	1,467
Butter,	2	–	27,143	1,618,503
Totals,	3,368½	97,215	27,186	1,619,970

Articles in Cold Storage condemned upon Physical and Chemical Examinations as Unfit for Food.

Date.	Articles.	Disposition.
Jan. 1, 1913, ...	100 pounds veal, . . .	Rendered.
Jan. 1, 1913, ...	30 pounds beef, . . .	Rendered.
Jan. 1, 1913, ...	200 pounds kidneys, . .	Incinerated.
Jan. 8, 1913, ...	19 pounds turkey, . . .	Rendered.
Jan. 9, 1913, ...	6 pounds goose, . . .	Rendered.
Jan. 10, 1913, ...	20 pounds venison, . .	Rendered.
Jan. 17, 1913, ...	1,010 pounds beef, . . .	Rendered.
Jan. 29, 1913, ...	27 pounds turkey, . . .	Incinerated.
Mar. 18, 1913, ...	16 pounds chicken, . .	Incinerated
Mar. 18, 1913, ...	24½ pounds goose, . . .	Incinerated.
Mar. 19, 1913, ...	6 pounds squab, . . .	Incinerated.
Mar. 19, 1913, ...	14 pounds turkey, . . .	Incinerated.
Mar. 19, 1913, ...	20 pounds beef, . . .	Incinerated.
Mar. 20, 1913, ...	960 pounds eggs, . . .	Buried.
Mar. 22, 1913, ...	1,000 pounds shad, . . .	Bait.
Mar. 26, 1913, ...	9 pounds chicken, . .	Incinerated.
Mar. 31, 1913, ...	5,000 pounds squid, . . .	Fertilizer.
Total, ...	8,461½ pounds.	

Chemical Examinations of Samples of Cold-storage Goods.

Articles.	Number found to be of Good Quality.	Number found to be Unfit for Food.	Total Number of Samples examined.
Kidneys, ...	–	1	1
Eggs, ...	–	2	2
Totals, ...	–	3	3

QUARTERLY REPORT ON THE BUSINESS OF SLAUGHTERING AND MEAT INSPECTION.

The quarterly report upon the work of slaughtering inspection, from Jan. 1 to Mar. 31, 1913, inclusive, has been rendered to the State Board of Health by the inspectors of slaughtering in the various cities and towns throughout the Commonwealth. The result of these inspections may be found in the following tables, showing the number and kind of carcasses inspected, the condemnations, reasons for condemnation and the disposition of such carcasses. Where blank spaces appear it indicates the absence of a report having been rendered by the inspector of slaughtering for such place.

Quarterly Report on Slaughtering Inspection, Jan. 1–Mar. 31, 1913.

Cities and Towns.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Abington,	3	22	154	–	1 cow, 1 hog.	1 tuberculosis, 1 hog cholera.	2 rendered.
Acton,	779	276	34	–	44 cattle, 24 calves.	40 tuberculosis, 1 tumor, 2 pneumonia, 1 septicæmia, 24 immature.	44 rendered, 24 fed to hogs and hens.
Acushnet,	13	63	119	–	2 hogs.	2 tuberculosis.	2 rendered.
Adams,	–	–	–	–	–	–	–
Agawam,	227	402	150	2	5 cattle, 6 calves.	5 tuberculosis, 6 immature.	7 rendered, 4 fed to hogs.
Alford,	9	–	22	3	–	–	–
Amesbury,	6	30	63	–	1 cow.	1 tuberculosis.	1 rendered.
Amherst,	118	166	58	19	1 cow, 1 hog.	2 tuberculosis.	2 rendered.
Andover,	–	2	130	–	–	–	–
Arlington,	–	–	–	–	–	–	–
Ashburnham,	11	9	36	–	1 cow.	1 tuberculosis.	1 burned.
Ashby,	79	267	140	1	10 cattle, 28 calves.	10 tuberculosis, 28 immature.	38 rendered.

Ashfield,	30	–	17	–	1 cow.	1 tuberculosis.	1 rendered.
Ashland,	9	5	143	–	3 cattle, 3 hogs.	6 tuberculosis.	6 rendered.
Athol,	43	6	137	3	4 cattle.	4 tuberculosis.	4 rendered.
Attleborough,	69	58	131	–	2 cattle, 1 hog.	2 tuberculosis, 1 anæmia.	3 buried.
Auburn,	31	31	31	–	3 cattle.	3 tuberculosis.	3 rendered.
Avon,	–	–	–	–	– –	– –	– –
Ayer,	–	–	–	–	– –	– –	– –
Barnstable,	8	4	104	–	– –	– –	– –
Barre,	–	–	–	–	– –	– –	– –
Becket,	3	5	12	–	– –	– –	– –
Bedford,	–	–	–	–	– –	– –	– –
Belchertown,	13	77	68	–	1 cow, 2 calves.	1 tuberculosis, 2 immature.	3 buried.
Bellingham,	–	–	7	–	– –	– –	– –
Belmont,	–	–	518	–	– –	– –	– –
Berkley,	1	–	28	–	– –	– –	– –
Berlin,	2	1	41	–	– –	– –	– –
Bernardston,	–	–	–	–	– –	– –	– –
BEVERLY,	–	–	10	–	– –	– –	– –
Billerica,	38	97	33	–	11 calves, 1 hog.	11 immature, 1 tuberculosis.	12 rendered.
Blackstone,	–	–	–	–	– –	– –	– –
Blandford,	10	6	28	–	– –	– –	– –
Bolton,	–	–	–	–	– –	– –	– –
Bourne,	–	–	20	–	– –	– –	– –
Boxborough,	–	–	–	–	– –	– –	– –
Boxford,	19	64	156	–	– –	– –	– –
Boylston,	14	44	53	2	– –	– –	– –
Braintree,	6	46	144	2	1 cow.	1 tuberculosis.	1 rendered.
Brewster,	1	14	4	–	– –	– –	– –
Bridgewater,	9	–	71	–	– –	– –	– –
Brimfield,	–	–	–	–	– –	– –	– –
BROCKTON,	1	3	55	–	1 cow.	1 tuberculosis.	1 rendered.
Brookfield,	4	17	26	–	1 hog.	1 tuberculosis.	1 buried.
Brookline,	–	–	–	–	– –	– –	– –
Buckland,	–	–	–	–	– –	– –	– –
Burlington,	–	–	–	–	– –	– –	– –
CAMBRIDGE,	–	6,852	4	–	114 calves.	114 immature.	114 rendered.
Canton,	–	–	58	–	2 hogs.	2 pneumonia.	2 buried.

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, JAN. 1–MAR. 31, 1913 — *Continued.*

CITIES AND TOWNS.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Carlisle,	–	–	–	–	– –	– –	– –
Carver,	1	1	11	–	– –	– –	– –
Charlemont,	23	3	65	1	1 cow.	1 hernia.	1 rendered.
Charlton,	88	212	70	–	– –	– –	– –
Chatham,	1	–	30	–	– –	– –	– –
Chelmsford,	625	409	330	19	13 cattle, 12 calves, 2 hogs.	13 tuberculosis, 12 immature, 1 pneumonia, 1 natural death.	27 rendered.
CHELSEA,	–	–	–	–	– –	– –	– –
Cheshire,	13	11	10	–	– –	– –	– –
Chester,	1	1	1	–	– –	– –	– –
Chesterfield,	11	15	66	–	1 cow.	1 tuberculosis.	1 buried.
CHICOPEE,	6	5	124	–	– –	– –	– –
Chilmark,	–	–	–	–	– –	– –	– –
Clarksburg,	–	–	–	–	– –	– –	– –
Clinton,	13	104	88	–	1 calf, 3 hogs.	1 immature, 1 hog cholera.	4 rendered.
Cohasset,	–	1	52	–	– –	– –	– –
Colrain,	73	2	86	–	– –	– –	– –
Concord,	–	–	2	–	– –	– –	– –
Conway,	–	–	–	–	– –	– –	– –
Cummington,	16	15	102	16	– –	– –	– –
Dalton,	–	–	–	–	– –	– –	– –
Dana,	4	–	19	–	– –	– –	– –
Danvers,	–	112	29	–	2 hogs.	2 tuberculosis.	2 rendered.
Dartmouth,	48	124	185	–	2 cattle, 5 hogs.	7 tuberculosis.	7 rendered.
Dedham,	8	246	151	9	3 cattle, 10 calves, 3 hogs.	4 tuberculosis, 10 immature, 2 hog cholera.	16 rendered.
Deerfield,	15	8	113	–	1 cow.	1 tuberculosis.	1 rendered.
Dennis,	6	6	18	–	– –	– –	– –
Dighton,	10	54	141	–	– –	– –	– –
Douglas,	3	13	19	–	– –	– –	– –
Dover,	–	–	–	–	– –	– –	– –

Dracut, . . .	136	126	410	–	4 cattle, 8 calves, 4 hogs.	5 tuberculosis, 4 immature, 2 jaundice, 5 enteritis.	12 rendered, 4 buried.
Dudley, . . .	42	59	68	–	1 cow.	1 tuberculosis.	1 buried.
Dunstable, . . .	3	1	7	–	– –	– –	– –
Duxbury, . . .	–	5	78	5	– –	– –	– –
East Bridgewater, . .	1	88	90	–	1 hog.	1 tuberculosis.	1 buried.
East Longmeadow, .	6	2	54	–	– –	– –	– –
Eastham, . . .	4	1	13	–	– –	– –	– –
Easthampton, . .	10	171	34	–	– –	– –	– –
Easton, ...	31	64	77	–	– –	– –	– –
Edgartown, . . .	4	1	77	13	– –	– –	– –
Egremont, . . .	70	–	95	–	– –	– –	– –
Enfield, . . .	5	107	22	–	1 hog.	1 tuberculosis.	1 rendered.
Erving, ...	6	8	21	–	– –	– –	– –
Essex, ...	–	4	3	–	– –	– –	– –
Everett, . . .	–	–	–	–	– –	– –	– –
Fairhaven, . . .	279	307	48	–	1 cow, 10 calves, 2 hogs.	3 tuberculosis, 10 immature.	13 rendered.
Fall River, . . .	–	–	23	–	– –	– –	– –
Falmouth, . . .	–	–	–	–	– –	– –	– –
Fitchburg, . . .	180	219	75	–	2 cattle, 4 calves.	2 tuberculosis, 4 immature.	6 rendered.
Florida, . . .	–	–	–	–	– –		– –
Foxborough, . . .	3	3	24	–	– –	– –	– –
Framingham, . .	109	66	3	11	– –	– –	– –
Franklin, . . .	3	15	124	–	4 hogs.	3 tuberculosis, 1 septicæmia.	2 rendered, 2 buried.
Freetown, . . .	1	–	16	–	– –	– –	– –
Gardner, . . .	–	–	–	–	– –	– –	– –
Gay Head, . . .	–	–	–	–	– –	– –	– –
Georgetown, . . .	–	–	–	–	– –	– –	– –
Gill, ...	16	11	83	2	– –	– –	– –
Gloucester, . . .	3	50	45	–	2 cattle, 5 calves.	1 tuberculosis, 1 pericarditis, 5 immature.	6 rendered, 1 destroyed by owner.
Goshen, . . .	–	–	–	–	– –	– –	– –
Gosnold, . . .	–	–	–	–	– –	– –	– –
Grafton, . . .	1	64	148	–	– –	– –	– –

Quarterly Report on Slaughtering Inspection, Jan. 1–Mar. 31, 1913 — *Continued.*

Cities and Towns.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Granby,	124	147	85	1	1 cow, 9 calves, 1 hog.	1 tuberculosis, 9 immature, 1 hog cholera.	1 rendered, 8 buried, 2 fed to hens.
Granville,	–	–	–	–	–	–	–
Great Barrington,	10	11	18	–	–	–	–
Greenfield,	–	–	–	–	–	–	–
Greenwich,	3	11	28	–	–	–	–
Groton,	5	36	140	–	2 hogs.	2 tuberculosis.	2 rendered.
Groveland,	–	1	22	–	–	–	–
Hadley,	3	5	41	–	–	–	–
Halifax,	1	–	–	–	–	–	–
Hamilton,	–	–	–	–	–	–	–
Hampden,	3	50	14	–	1 hog.	1 peritonitis.	1 buried.
Hancock,	–	–	–	–	–	–	–
Hanover,	38	–	–	–	–	–	–
Hanson,	–	3	38	–	–	–	–
Hardwick,	2	–	5	–	–	–	–
Harvard,	10	253	38	–	1 cow, 4 calves.	1 tuberculosis, 4 immature.	1 buried, 3 fed to hens, 1 consumed by owner.
Harwich,	–	–	–	–	–	–	–
Hatfield,	20	27	132	–	1 cow.	1 tuberculosis.	1 rendered.
HAVERHILL,	5	34	9	–	–	–	–
Hawley,	14	1	24	–	–	–	–
Heath,	17	1	68	–	1 cow.	1 tuberculosis.	1 rendered.
Hingham,	–	–	116	–	1 hog.	1 tuberculosis.	1 rendered.
Hinsdale,	–	–	–	–	–	–	–
Holbrook,	–	–	–	–	–	–	–
Holden,	13	58	58	6	–	–	–
Holland,	–	–	–	–	–	–	–
Holliston,	–	–	–	–	–	–	–
HOLYOKE,	6	9	23	–	1 cow.	1 tuberculosis.	1 rendered.
Hopedale,	–	–	–	–	–	–	–
Hopkinton,	–	1	36	–	–	–	–
Hubbardston,	9	34	64	–	–	–	–

Hudson,	3	11	33	–	– –	– –	– –
Hull,	–	1	5	–	– –	– –	– –
Huntington,	–	–	–	–	– –	– –	– –
Ipswich,	3	8	101	–	2 hogs.	2 hog cholera.	2 rendered.
Kingston,	2	3	16	–	1 cow.	1 tuberculosis.	1 rendered.
Lakeville,	–	–	13	–	– –	– –	– –
Lancaster,	1	10	40	2	– –	– –	– –
Lanesborough,	–	–	–	–	– –	– –	– –
LAWRENCE,	51	14	158	–	3 cattle, 1 calf, 5 hogs.	1 tuberculosis, 1 emaciated, 1 milk fever, 1 immature, 1 inspector not present, 1 uræmia, 1 bruised, 2 hog cholera.	9 rendered.
Lee,	16	1	53	–	– –	– –	– –
Leicester,	11	104	61	1	– –	– –	– –
Lenox,	83	3	22	5	– –	– –	– –
Leominster,	27	115	115	–	2 cattle, 8 calves, 3 hogs.	5 tuberculosis, 8 immature.	13 rendered.
Leverett,	21	16	44	–	– –	– –	– –
Lexington,	16	836	486	9	44 calves.	43 immature, 1 injured.	44 rendered.
Leyden,	13	2	23	–	– –	– –	– –
Lincoln,	–	–	–	–	– –	– –	– –
Littleton,	–	–	73	–	– –	– –	– –
Longmeadow,	–	–	9	–	– –	– –	– –
LOWELL,	–	–	145	–	1 hog.	1 tuberculosis.	1 rendered.
Ludlow,	1	198	56	–	– –	– –	– –
Lunenburg,	62	183	225	1	1 cow, 2 calves.	1 tuberculosis, 2 immature.	3 rendered.
LYNN,	133	81	76	–	1 cow, 2 calves.	1 tuberculosis, 2 immature.	3 rendered.
Lynnfield,	256	234	–	–	9 cattle, 10 calves.	9 tuberculosis, 10 immature.	19 rendered.
MALDEN,	–	–	–	–	– –	– –	– –
Manchester,	–	–	–	–	– –	– –	– –
Mansfield,	4	9	213	–	2 calves, 2 hogs.	4 tuberculosis.	4 rendered.

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, JAN. 1–MAR. 31, 1913 — *Continued.*

Cities and Towns.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Marblehead,	–	–	32	–	– –	– –	– –
Marion,	–	–	57	–	– –	– –	– –
MARLBOROUGH,	1	36	128	4	1 hog.	1 emaciated.	1 rendered.
Marshfield,	–	–	–	–	– –	– –	– –
Mashpee,	–	–	–	–	– –	– –	– –
Mattapoisett,	1	2	77	1	1 calf.	1 immature.	1 buried.
Maynard,	15	86	68	–	1 hog.	1 hog cholera.	1 buried.
Medfield,	1	–	50	–	– –	– –	– –
MEDFORD,	–	–	–	–	– –	– –	– –
Medway,	55	135	29	6	1 cow, 3 calves.	1 tuberculosis, 3 immature.	4 rendered.
MELROSE,	–	–	105	–	3 hogs.	2 hog cholera, 1 jaundice.	3 rendered.
Mendon,	–	–	–	–	– –	– –	– –
Merrimac,	–	5	44	–	– –	– –	– –
Methuen,	130	70	101	–	2 cattle, 2 calves, 2 hogs.	4 tuberculosis, 2 immature.	6 rendered.
Middleborough,	16	27	146	–	1 cow.	1 tuberculosis.	1 rendered.
Middlefield,	–	–	–	–	– –	– –	– –
Middleton,	–	–	22	–	– –	– –	– –
Milford,	84	173	111	–	6 calves.	6 immature.	6 buried.
Millbury,	–	–	–	–	– –	– –	– –
Millis,	31	47	2	–	– –	– –	– –
Milton,	1	–	37	7	1 cow.	1 tuberculosis.	1 rendered.
Monroe,	–	–	–	–	– –	– –	– –
Monson,	–	–	–	–	– –	– –	– –
Montague,	52	34	56	2	– –	– –	– –
Monterey,	–	–	–	–	– –	– –	– –
Montgomery,	–	–	–	–	– –	– –	– –
Mount Washington,	–	–	–	–	– –	– –	– –
Nahant,	–	–	–	–	– –	– –	– –
Nantucket,	2	22	88	–	– –	– –	– –
Natick,	–	2	7	–	– –	– –	– –
Needham,	–	–	–	–	– –	– –	– –

New Ashford,	–	–	–	–	– –	– –	– –
NEW BEDFORD,	42	131	155	–	3 cattle, 2 calves, 1 hog.	3 tuberculosis, 2 immature, 1 peritonitis.	6 rendered.
New Braintree,	16	52	27	–	– –	– –	– –
New Marlborough,	–	–	–	–	– –	– –	– –
New Salem,	5	3	32	–	– –	– –	– –
Newbury,	–	–	–	–	– –	– –	– –
NEWBURYPORT,	109	95	127	2	1 cow, 1 calf.	1 tuberculosis, 1 immature.	2 rendered.
NEWTON,	–	–	–	–	– –	– –	– –
Norfolk,	1	2	40	–	– –	– –	– –
NORTH ADAMS,	120	129	31	–	4 cattle, 4 calves.	3 tuberculosis, 1 paralysis, 4 immature.	7 rendered, 1 buried.
North Andover,	–	–	18	–	– –	– –	– –
North Attleborough,	45	54	129	–	2 calves.	2 immature.	2 buried.
North Brookfield,	8	11	47	–	– –	– –	– –
North Reading,	–	–	8	–	– –	– –	– –
NORTHAMPTON,	72	128	98	–	– –	– –	– –
Northborough,	2	–	21	5	– –	– –	– –
Northbridge,	9	4	43	10	1 cow.	1 tuberculosis.	1 rendered.
Northfield,	5	1	10	4	– –	– –	– –
Norton,	–	3	26	–	– –	– –	– –
Norwell,	1	7	91	1	– –	– –	– –
Norwood,	–	116	56	–	– –	– –	– –
Oak Bluffs,	–	–	–	–	– –	– –	– –
Oakham,	1	25	–	–	– –	– –	– –
Orange,	–	–	–	–	– –	– –	– –
Orleans,	3	3	23	–	– –	– –	– –
Otis,	9	5	14	10	1 hog.	1 tuberculosis.	1 buried.
Oxford,	4	6	69	–	– –	– –	– –
Palmer,	128	69	52	–	2 calves.	2 immature.	1 compost, 1 consumed by owner.
Paxton,	3	38	20	–	– –	– –	– –
Peabody,	147	310	708	1	6 calves, 3 hogs.	6 immature, 3 hog cholera.	9 rendered.
Pelham,	–	–	7	–	– –	– –	– –
Pembroke,	–	15	1	–	– –	– –	– –
Pepperell,	–	–	–	–	– –	– –	– –
Peru,	–	–	–	–	– –	– –	– –

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, JAN. 1–MAR. 31, 1913 — *Continued.*

CITIES AND TOWNS.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Petersham,	12	12	54	–	1 hog.	1 pneumonia.	1 buried.
Phillipston,	8	12	32	–	– –	– –	– –
PITTSFIELD,	90	43	35	–	1 cow.	1 jaundice.	1 rendered.
Plainfield,	8	21	60	–	– –	– –	– –
Plainville,	–	–	–	–	– –	– –	– –
Plymouth,	34	11	106	–	– –	– –	– –
Plympton,	1	–	8	–	– –	– –	– –
Prescott,	5	–	3	–	– –	– –	– –
Princeton,	5	90	82	–	1 calf.	1 immature.	1 fed to hens.
Provincetown,	–	–	7	–	– –	– –	– –
QUINCY,	–	–	–	–	– –	– –	– –
Randolph,	–	–	–	–	– –	– –	– –
Raynham,	3	25	29	–	– –	– –	– –
Reading,	137	31	19	–	1 calf.	1 immature.	1 rendered.
Rehoboth,	89	306	88	3	– –	– –	– –
Revere,	–	–	–	–	– –	– –	– –
Richmond,	–	–	–	–	– –	– –	– –
Rochester,	–	–	–	–	– –	– –	– –
Rockland,	–	–	–	–	– –	– –	– –
Rockport,	3	4	–	–	1 cow.	1 tuberculosis.	1 buried.
Rowe,	10	1	18	–	– –	– –	– –
Rowley,	11	86	107	–	1 hog.	1 cirrhosis.	1 buried.
Royalston,	3	6	23	–	– –	– –	– –
Russell,	1	8	24	–	– –	– –	– –
Rutland,	–	–	–	–	– –	– –	– –
SALEM,	–	–	125	–	– –	– –	– –
Salisbury,	1	1	40	–	– –	– –	– –
Sandisfield,	–	–	–	–	– –	– –	– –
Sandwich,	3	1	44	–	– –	– –	– –
Saugus,	–	8	35	–	– –	– –	– –
Savoy,	–	–	–	–	– –	– –	– –

Scituate,	–	–	–	–	–	–	–	–	–	–
Seekonk,	–	2	83	–	–	–	–	–	–	–
Sharon,	–	2	5	–	–	–	–	–	–	–
Sheffield,	–	–	–	–	–	–	–	–	–	–
Shelburne,	36	4	66	6	1 cow, 1 hog.		1 tuberculosis, 1 dropsy.		1 rendered, 1 buried.	
Sherborn,	18	33	24	–	–	–	–	–	–	–
Shirley,	–	–	–	–	–	–	–	–	–	–
Shrewsbury,	21	166	144	1	–	–	–	–	–	–
Shutesbury,	–	–	–	–	–	–	–	–	–	–
Somerset,	–	–	43	–	–	–	–	–	–	–
SOMERVILLE,	–	–	56	–	1 hog.		1 hog cholera.		1 rendered.	
South Hadley,	11	105	171	–	1 cow.		1 paralysis.		1 buried.	
Southampton,	42	53	100	–	3 cattle, 1 calf.		3 tuberculosis, 1 immature.		4 buried.	
Southborough,	–	–	–	–	–	–	–	–	–	–
Southbridge,	26	32	51	–	2 cattle, 2 calves, 1 hog.		2 tuberculosis, 2 immature, 1 hog cholera.		4 rendered, 1 buried.	
Southwick,	14	39	119	3	1 hog.		1 bruised.		1 buried.	
Spencer,	11	67	42	–	–	–	–	–	–	–
SPRINGFIELD,	–	153	33	–	1 calf.		1 immature.		1 rendered.	
Sterling,	–	–	–	–	–	–	–	–	–	–
Stockbridge,	–	–	–	–	–	–	–	–	–	–
Stoneham,	–	–	72	–	–	–	–	–	–	–
Stoughton,	6	38	50	–	–	–	–	–	–	–
Stow,	2	1	3	–	–	–	–	–	–	–
Sturbridge,	86	158	78	1	3 cattle.		3 tuberculosis.		3 rendered.	
Sudbury,	–	1	16	–	–	–	–	–	–	–
Sunderland,	–	12	62	–	–	–	–	–	–	–
Sutton,	3	57	35	–	–	–	–	–	–	–
Swampscott,	–	–	–	–	–	–	–	–	–	–
Swansea,	131	152	188	–	3 cattle, 1 calf, 1 hog.		4 tuberculosis, 1 immature.		5 rendered.	
TAUNTON,	141	40	276	1	–	–	–	–	–	–
Templeton,	–	–	–	–	–	–	–	–	–	–
Tewksbury,	126	75	83	–	1 cow, 3 calves.		1 tuberculosis, 3 immature.		1 rendered, 3 fed to hogs.	
Tisbury,	–	–	12	–	–	–	–	–	–	–
Tolland,	–	–	–	–	–	–	–	–	–	–
Topsfield,	–	38	82	975	6 calves, 2 sheep.		8 immature.		8 rendered.	

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, JAN. 1–MAR. 31, 1913 — *Concluded.*

Cities and Towns.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Townsend,	12	7	17	–	1 cow.	1 tuberculosis.	1 rendered.
Truro,	–	–	–	–	– –	– –	– –
Tyngsborough,	–	–	16	–	– –	– –	– –
Tyringham,	3	–	32	–	– –	– –	– –
Upton,	–	3	8	–	– –	– –	– –
Uxbridge,	14	2	64	–	3 cattle, 2 hogs.	5 tuberculosis.	5 buried.
Wakefield,	–	–	86	–	1 hog.	1 tuberculosis.	1 rendered.
Wales,	–	–	–	–	– –	– –	– –
Walpole,	2	–	166	1	– –	– –	– –
WALTHAM,	–	–	42	–	– –	– –	– –
Ware,	6	32	34	–	– –	– –	– –
Wareham,	–	–	–	–	– –	– –	– –
Warren,	19	50	63	–	– –	– –	– –
Warwick,	–	–	–	–	– –	– –	– –
Washington,	5	17	16	2	1 cow.	1 tuberculosis.	1 buried.
Watertown,	–	–	–	–	– –	– –	– –
Wayland,	3	7	116	–	1 hog.	1 hog cholera.	1 rendered.
Webster,	3	16	54	–	– –	– –	– –
Wellesley,	–	–	–	–	– –	– –	– –
Wellfleet,	6	5	11	–	1 calf.	1 immature.	1 consumed by owner.
Wendell,	8	2	20	1	– –	– –	– –
Wenham,	58	63	203	–	3 cattle, 2 calves, 2 hogs.	5 tuberculosis, 1 immature, 1 pneumonia.	7 rendered.
West Boylston,	–	–	21	–	– –	– –	– –
West Bridgewater,	6	125	147	1	2 cattle, 11 calves.	3 tuberculosis, 10 immature.	2 buried, 11 rendered.
West Brookfield,	8	8	38	–	1 hog.	1 hog cholera.	1 buried.
West Newbury,	–	–	–	–	– –	– –	– –
West Springfield,	–	–	–	–	– –	– –	– –
West Stockbridge,	1	1	1	–	– –	– –	– –
West Tisbury,	7	1	2	–	– –	– –	– –

Westborough,	4	10	33	–	1 cow.	1 tuberculosis.	1 rendered.
Westfield,	–	–	–	–	– –	– –	– –
Westford,	12	175	148	2	1 cow, 4 calves.	1 tuberculosis, 4 immature.	5 rendered.
Westhampton,	1	2	12	–	– –	– –	– –
Westminster,	3	3	10	13	– –	– –	– –
Weston,	24	223	38	–	2 cattle, 17 calves, 3 hogs.	1 pneumonia, 1 septicæmia, 17 immature, 3 inspector not present.	5 rendered, 17 buried.
Westport,	152	162	419	9	3 cattle, 2 calves, 4 hogs.	7 tuberculosis, 2 immature.	7 rendered, 2 burned.
Westwood,	–	–	80	–	– –	– –	– –
Weymouth,	–	–	–	–	– –	– –	– –
Whately,	–	–	–	–	– –	– –	– –
Whitman,	3	–	1	–	3 cattle.	3 tuberculosis.	3 rendered.
Wilbraham,	3	2	49	–	1 hog.	1 tuberculosis.	1 rendered.
Williamsburg,	–	–	–	–	– –	– –	– –
Williamstown,	49	197	206	412	2 hogs.	2 hog cholera.	2 buried. –
Wilmington,	12	106	132	–	2 calves, 2 hogs.	2 immature, 2 hog cholera.	4 rendered.
Winchendon,	10	35	84	1	1 cow, 1 calf, 2 hogs.	1 advanced pregnancy, 3 septicæmia.	3 rendered, 1 buried.
Winchester,	–	–	–	–	– –	– –	– –
Windsor,	–	–	–	–	– –	– –	– –
Winthrop,	–	–	–	–	– –	– –	– –
WOBURN,	–	23	755	–	2 calves, 5 hogs.	2 immature, 5 tuberculosis.	7 rendered.
WORCESTER,	682	544	590	9	21 cattle, 26 calves, 13 hogs.	23 tuberculosis, 26 immature, 10 pneumonia, 1 jaundice.	50 rendered, 10 buried.
Worthington,	4	3	54	–	– –	– –	– –
Wrentham,	–	–	–	–	– –	– –	– –
Yarmouth,	–	–	29	–	– –	– –	– –

Summary.

Total number of carcasses inspected,			47,464
(a) Cattle,		7,757	
(b) Calves,		19,356	
(c) Hogs,		18,724	
(d) Sheep,		1,627	
Total number of carcasses passed,			46,713
Total number of carcasses condemned,			751
(a) Cattle,		204	
(b) Calves,		430	
(c) Hogs,		115	
(d) Lambs,		2	
Reasons for condemnation: —			
(a) Tuberculosis,		247	
Cattle,	190		
Calves,	3		
Hogs,	54		
(b) Immature,		422	
Calves,	420		
Lambs,	2		
(c) Hog cholera,		25	
Hogs,	25		
(d) Pneumonia,		18	
Cattle,	3		
Calf,	1		
Hogs,	14		
(e) Septicæmia,		6	
Cattle,	2		
Calf,	1		
Hogs,	3		
(f) Enteritis,		5	
Calves,	4		
Hog,	1		
(g) Jaundice,		5	
Cow,	1		
Hogs,	4		
(h) Peritonitis,		2	
Hogs,	2		
(i) Pericarditis,		1	
Cow,	1		

Reasons for condemnation — *Concluded.*			
(j) Cirrhosis,		1	
Hog,	1		
(k) Anæmia,		1	
Hog,	1		
(l) Paralysis,		2	
Cattle,	2		
(m) Dropsy,		1	
Hog,	1		
(n) Uræmia,		1	
Hog,	1		
(o) Emaciated,		2	
Cow,	1		
Hog,	1		
(p) Tumor,		1	
Cow,	1		
(q) Hernia,		1	
Cow,	1		
(r) Milk fever,		1	
Hog,	1		
(s) Advanced pregnancy,		1	
Cow,	1		
(t) Natural death,		1	
Hog,	1		
(u) Bruised,		2	
Hogs,	2		
(v) Injured,		1	
Calf,	1		
(w) Inspector not present,		4	
Cow,	1		
Hogs,	3		
Total reasons,			751
Disposition of carcasses: —			
(a) Rendered,		614	
Cattle,	179		
Calves,	356		
Hogs,	77		
Lambs,	2		

SUMMARY — *Concluded.*

Disposition of carcasses — *Continued.*

(*b*) Buried,		92
Cattle,	19	
Calves,	33	
Hogs,	40	
(*c*) Burned,		3
Cattle,	3	
(*d*) Fed to hogs,		7
Calves,	7	
(*e*) Fed to hens,		6
Calves,	6	
(*f*) Fed to hogs and hens,		24
Calves,	24	
(*g*) Compost,		1
Calf,	1	
(*h*) Consumed by owner,		3
Calves,	3	

Disposition of carcasses — *Concluded.*

(*i*) Destroyed by owner,		1
Cow,	1	
Total dispositions,		751

Of the above cities and towns, the following reported no slaughterhouse within their limits: —

Everett, Pelham, Plainville.

The following cities and towns reporting upon the work of inspection rendered "Nothing to report": —

Boxborough, Everett, Gay Head, Malden, Newton, Plainville, Revere, Swampscott.

During the quarter ending March 31, 1913, several confiscations were made by the inspectors of the State Board of Health, due for the most part to uninspected and unstamped carcasses.

The following table shows the kind of carcasses confiscated, the number of pounds in each confiscation, the reasons and the disposition of the same: —

DATE.	Articles.	Reasons.	Disposition.
Mar. 5, 1913,	930 pounds beef, .	Uninspected and unstamped, .	Rendered.
Mar. 12, 1913,	60 pounds veal, .	Uninspected and unstamped, .	Incinerated.
Mar. 13, 1913,	42½ pounds veal, .	Uninspected and unstamped, .	Buried.
Mar. 13, 1913,	500 pounds pork, .	Uninspected and unstamped, .	Rendered.
Mar. 17, 1913,	400 pounds beef, .	Uninspected and unstamped, .	Rendered.
Mar. 17, 1913,	360 pounds pork, .	Uninspected and unstamped, .	Rendered.
Mar. 18, 1913,	20 pounds veal, .	Uninspected and unstamped, .	Rendered.
Mar. 19, 1913,	250 pounds beef, .	Putrefaction, ...	Rendered.
Mar. 19, 1913,	300 pounds veal, .	Uninspected and unstamped, .	Buried.
Mar. 19, 1913,	175 pounds veal, .	Uninspected and unstamped, .	Buried.
Total, .	3,037½ pounds.		

REPORT ON INSPECTION OF DAIRIES.

During the month of April, 1913, 480 dairies were examined in the following places: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Acton,	12	11	91.67	1	8.33
Second inspection,	3	3	100.00	–	–
Third inspection,	38	34	89.47	4	10.53
Fourth inspection,	1	1	100.00	–	–
Fifth inspection,	2	2	100.00	–	–
Bridgewater,	4	2	50.00	2	50.00
Third inspection,	16	13	81.25	3	18.75
Carlisle,	9	6	66.67	3	33.33
Second inspection,	6	4	66.67	2	33.33
Third inspection,	29	21	72.41	8	27.59
Fourth inspection,	1	1	100.00	–	–
Dedham,	–	–	–	–	–
Second inspection,	3	3	100.00	–	–
Third inspection,	22	16	72.73	6	27.27
Dover,	2	1	50.00	1	50.00
Second inspection,	1	–	–	1	100.00
Third inspection,	16	7	43.75	9	56.25
Fourth inspection,	1	1	100.00	–	–
Easton,	12	9	75.00	3	25.00
Second inspection,	11	8	72.73	3	27.27
Third inspection,	21	17	80.95	4	19.05
Framingham,	16	13	81.25	3	18.75
Second inspection,	15	13	86.67	2	13.33
Third inspection,	14	13	92.86	1	7.14
Fourth inspection,	6	6	100.00	–	–
Hull,	1	–	–	1	100.00
Mansfield,	5	5	100.00	–	–
Third inspection,	12	12	100.00	–	–
Maynard,	8	7	87.50	1	12.50
Second inspection,	1	1	100.00	–	–
Third inspection,	5	2	40.00	3	60.00
Milton,	16	9	56.25	7	43.75
Third inspection,	7	5	71.43	2	28.57
Fourth inspection,	9	7	77.78	2	22.22
Needham,	3	1	33.33	2	66.67
Second inspection,	6	4	66.67	2	33.33
Third inspection,	6	6	100.00	–	–
Fourth inspection,	1	1	100.00	–	–
Norton,	7	5	71.43	2	28.57
Second inspection,	5	4	80.00	1	20.00
Third inspection,	11	9	81.82	2	18.18
Sudbury,	22	18	81.82	4	18.18
Second inspection,	2	2	100.00	–	–
Third inspection,	30	26	86.67	4	13.33
Fourth inspection,	4	4	100.00	–	–
Fifth inspection,	5	5	100.00	–	–

PLACE.	Numbe examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Wellesley,	2	1	50.00	1	50.00
Second inspection,	7	6	85.71	1	14.29
West Bridgewater,	13	9	69.23	4	30.77
Second inspection,	3	1	33.33	2	66.67
Third inspection,	27	18	66.67	9	33.33
Weston,	–	–	–	–	–
Fourth inspection,	1	1	100.00	–	–

Total number of dairies examined,	480
Number found to be free from objectionable conditions,	374
Number concerning which letters were sent,	106
Total number of conditions to which attention was called,	315
Percentage of dairies which passed inspection,	77.92

In addition to the above, 142 dairies were visited at which the sale of milk had been discontinued.

Included in the total number of dairies visited were 132 which had recently started in the milk-producing business and were inspected for the first time.

The names of the owners of the dairies found to be worthy of commendation follow: —

ACTON.

Class B.

Anderson, Hans
Barrows, W. L.‡
Blume, Geo. O.
Bradley, John ‡
Bresth, S.‡
Bulette, Frank ‡
Calder, Charles ‡ †
Carey, Edward H.
Christoffersen, Andras ‡
Conant, Luther || †
Davis, Luther ‡ †
DeSouza, Benjamin ‡ ¶
DeSouza, Joseph ‡ ¶
Dole, A. G.‡
Durkee Brothers
Enneguess, Michael
Farrand, W. H.
Flint, W. A.‡
Franklin, W. B.
Ham, Geo. A.
Hanson, Mrs. E.‡
Hennessey, D. J.‡
Hodgen, George ‡
Jones, Estate of E. H.‡
Jones, Warren *
Kelly, Wm. F.‡
McCarthy, John ‡
Mekkelsen, Jans
Mekkelson, John ‡ †
Murphy, George * †
Ollson, Simon
Perkins, A. H.‡
Perkins, L. W.‡
Piper, Anson C.‡
Pratt, Mrs. A. E.‡
Proctor, Hiram W. P.‡
Reed, Moses A.‡ ¶
Robbins, Webster C.|| †
Rudolph, Wm. H.‡ ¶
Sanborn, P. R.
Sebastian, L. A.‡ ¶
Shapley, E. R.‡ ¶
Spinney, E. L.* †
Stevenson, John M.‡ ¶
Teele, E. R.‡
Tenney, John P.‡
"Town Farm" ‡ ¶
Tuttle, Horace F.‡ †
Tyler & Upham ‡
Watkins, John ‡
Whitcomb, F. S.§

BRIDGEWATER.

Class A.

Burrill, Charles ‡ ¶
Helmes, Charles F.

* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Fifth inspection.
¶ Reported favorably on all previous inspections.

Class B.

Alcott, George J.‡
Ames, Fisher ‡ ¶
Conant, Andrew ‡ †
Cook, Charles M.‡
Copeland, George E.‡
Johnson, George L.‡ ¶
Keith, Benjamin ‡
Leach, Ernest ‡ ¶
Leach, Philo
McFarland, Alvah H.‡
Murray, James ‡ ¶
Rhoades, E. S.‡ ¶
Wilbar, Charles ‡ †

Carlisle.

Class B.

Blaisdell, B. F.‡ ¶
Blaisdell, E. I.
Bradley, J. J.‡
Coombs, Albert H.
Davis, J. P.‡ ¶
Dunn, George ‡ †
Duren, W. C.‡
Dutton, H. P.‡
Ellison, Murton ‡
Fadden, Charles * †
Forbush, Charles ‡
Green, Peter F.
Hall, I. B.* †
Hart, John *
Heald, George H.* †
Heald, John W.‡
Jones, G. Albert
Lapham, Arthur ‡
Lee, H. A.§
Lovering, J. H.‡
Nickles, A. P.‡
Nickles, Albert S.
Peterson, Emil ‡
Prescott, W. A.‡
Ricker, Edw. S.‡
Simeonson, Mrs. Anna ‡ ¶
Skelton, C. A.‡ †
"Town Farm" ‡ ¶
Wilkins, Frank E.‡
Wilkins, George ‡ ¶
Wilson, H. W.‡ ¶
Zelaski, W.

Dedham.

Class A.

Burgess, J. K.‡ ¶
Cochrane Brothers * †

Class B.

Bingham, Henry ‡
Blitzel, Peter ‡
Boland, John *
Bussey, H. G.‡ ¶
Carney, Mark ‡ †
Cleghorn, Thomas ‡
Clough, Irwin ‡
Conley, Mrs. Margaret ‡
Farrington, F. O.*
Goff, Jacob ‡
Kelley, James ‡
Krug, John ‡ †
Law, Samuel ‡
Lynch Brothers ‡
Newbury, William ‡
"Town Farm" ‡
Volk Brothers ‡ ¶

Dover.

Class A.

Porter, Dr. W. T.‡ ¶

Class B.

Bond, R. H.‡
Brown, John H.‡
Chickering, G. E.‡
Comiskey, M. W.‡ ¶
Hanchette, Homer § †
Heard, Mrs. H. M.‡
Rice, H. L.
Thompson, G. H.‡ †

Easton.

Class A.

Ames, Fred L.
Sylvester, George * †

* Second inspection.
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‡ Third inspection.
§ Fourth inspection.
¶ Reported favorably on all previous inspections.

Class B.

Alger, Horace ‡ ¶
Beatty, John ‡
Buck, Sanford D.*
Chaplin, William
Dailey, J. M.‡
Dermody, James ‡
Farrar, Brooks ‡
Gooch, Alphonso ‡ †
Hamilton, Robert * †
Heath, Henry W.‡ ¶
Hewitt, H. A.‡ ¶
Johnson, Carl *
Johnson, John T.‡
Kelty, Hyson C.
Lindquest, O. J.‡
Littlefield, H. B.* †
Maliff, Frank H.* †
McLeod, William ‡
Murray, Alexander ‡
Nolan, Edward J.*
Packard, Irving ‡
Peck, Fred A.
Pierce, Robinson
Randall, Mary F.‡
Randall, Oscar B.*
"Town Farm" ‡
Tufts, William
Tune, Alexander J.‡
Williams, Edward
Williams, Jesse
Williams, John B.
Willis, Horace ‡

FRAMINGHAM.

Class AA.

Belches, E. F. & D. M.* †
Bowditch, John P.
Bowditch, N. I.‡ ¶
Perkins, R. F.* †

Class A.

Bowlker, T. J.§ ¶
Clayton, Albert E.‡
Danforth School * †
Esterbrook, E. L.‡ ¶
Ford, Miss I. H.* †
Jackson, Mrs. Mary A.* †
Parsons, C. P.§ ¶
"Town Farm" ‡ ¶
Williams, J. S.

Class B.

Atwell Brothers ‡
Barbour, Eldridge
Barton, C. C.‡ ¶
Bauld, J. G.
Bell, James E.*
Bradford, Robert * †
Brown, A. W.
Cahill, Frank
Coles, Charles W.‡
Dightman, F. W.‡ †
Ducey, James
Eaton, Charles F.* †
Landers, Jacob ‡
Leach, Nathan E.
Loker, W. W.* †
Mayo, W. I.* †
Monahan, Michael * †
Mulcahy, Thomas F.
Nelson, C. A.* †
Noyes, Charles L.§
Sampson, Thomas §
Sanderson, G. O.§
Sanderson, John B.
Saucier, Augustus
Shilliedy, T.‡
Simpson, Frank E.
Stenson, Andrew O.§ ¶
Stuart, W. A.
Thompson, Alfred L.‡
Walkup, H. B.* †
Warren, E. R.‡ ¶
Winch, Bert P.‡

MANSFIELD.

Class A.

Lowney, Walter M.‡ ¶

Class B.

Atwood, John M.‡ ¶
Bailey, Geo. & Sons
Calhoon, Franklin P.
Cobb, James
Cross, Solomon T.‡
Flint, Benjamin ‡ ¶
Freeman, George B.‡ ¶
Holmes, Charles F.
Jaynes, John E.‡
McMillan, John H.‡
Murphy, Alexander ‡
Murphy, John ‡ ¶
Rhyno, Joseph A.‡
Schultz, Herman ‡ ¶
Strese, August
"Town Farm" ‡

* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
¶ Reported favorably on all previous inspections.

MAYNARD.

Class B.

Herries, Matthew
Hinkari, Erick
Hinkari, John
Lent, Charles B.
Ollela, Abraham
Parmenter, Washington ‡
"Town Farm" ‡ ¶
White, Mrs. Clara B.
Wilcomb, Newel
Wood, T. C.*

MILTON.

Class AA.

Marshall, Ainsley § ¶

Class A.

Fenno, J. P.‡ ¶
Russell, Mrs. H. S.‡ ¶

Class B.

Badger, George Y.
Briggs, Alden
Chadbourne, W. H.
Copeland, Charles C.§
Dennis, W. S.§ ¶
Elson, J. B.
Ford, Edward E.§
Gushee, A. S.§
Hollidge, C. Crawford
Hunt, E. W.
Lamb, H. A.
Manning, M. J. & Sons ‡
Murray, Michael W.‡ ¶
Reynolds, J. H.§
Sanford, A. R.§
Schindler, Caspar
Snow, A. D.‡
Wellington, W. L.

NEEDHAM.

Class AA.

Walker, Gordon Co.§ ¶

Class B.

Allen, Mrs. C. Whittaker
Bezanson, E. F. * †
Brown, Charles ‡
Crowley, William ‡
Delachie, James * †
Eaton, Harris ‡
Kennedy, Robert * †
Tilton, J. A.‡
Tuck, G. R.‡ ¶
Webb, Kenneth E.*
Wills, George ‡ ¶

NORTON.

Class B.

Becker, Clifton
Birkenshaw, John ‡
Brourlette, Mrs. A.‡
Dean, Mrs. Pearl E.‡
Fagan, Mrs. Maria ‡ †
Farquhar, Andrew D.
Freeman, Charles A.
Freeman, Edward * †
Freeman, Henry S.‡ ¶
Honey, Herbert *
Jackson, George B.‡
Lane, Homer
Leonard, Virgil H.‡ ¶
Leonard, William E.‡
Rubin, Joseph *
Sherwood, Ira D.‡ †
Walker, Alden G.*
White, Charles

SUDBURY.

Class A.

Visocchi, A.

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
¶ Reported favorably on all previous inspections.

Class B.

Amerault, J. D.‡
Ames Brothers ||
Austin, Clarence A.‡ †
Baker, B. O. ||
Baker, L. W.‡
Baldwin, Charles *
Baldwin, W. E.
Banfil, W. H.
Bent, F. E.
Bent, Harold
Bent, James E.‡
Buttaro, C.
Clark, Fred L.§
Coolidge, Geo. B.
Cossar, J. B.
Cummings, G. P.‡ ¶
Cutler, Roland R.
Dadman, A. A.
Dakin, Arthur A.‡ ¶
Deen, D. R.
Fairbanks, W. H.§
Farrell, D.‡ †
Ferden, Mrs. C. L.‡
Goodnow, F. W.
Goodnow, Geo. E.‡
Hall, A. J.‡
Hall, S. W.
Ham, Fred ||
Haynes, George A.‡
Haynes, Josiah B.‡
Haynes, Sidney D.‡
Huntley, L. H.‡ ¶
Johnson, N.
Lenzi, J.
Libby, E. E.‡ ¶
McGreevy, John ‡
McManus, P. J.‡
Moore, W. M.‡
Morse, C. J.‡
Nelson, S. O.
Noyes Brothers ‡
O'Neil, Thomas F.§
Perkins, N. H. ||
Perry, Sylvester D.*
Rice, C. W.‡
Smith, E. R.‡
Stone, W. L. & Son ‡
Thompson, G. H.‡
"Town Farm" § ¶
Tyler, George A.
Walker, C. B.‡
Walker, J. M.‡
Wheeler, Levi
Wright, Charles ||

Wellesley.

Class A.

McLean, William * †

Class B.

Burnett, W. J.* †
Gleason, P. J.* †
Kilman, George J.* †
McCracken, S. F.*
Shea, Timothy
Sweetser, G. A.* †

West Bridgewater.

Class A.

Copeland Brothers ‡ ¶

Class B.

Bartlett, Horace ‡ ¶
Brown, Charles A.
Cheney, F. A.‡ ¶
Copeland, Samuel G.‡
Guinea, Thomas F.‡
Haglind, John ‡ ¶
Hatch, Robert H.* †
Haven, Edward ‡ †
Hayward, Estate of J. L.‡
Howard, Frank L.‡ ¶
Johnson, Carl O.
Lively, Kenneth
Manly, Albert ‡ ¶
Mills, Andrew M.‡ ¶
Peckham, A. C.‡
Sagarin, Isaac
Snell, T. Prescott ‡
Sullivan, Charles E.
Sullivan, James ‡ ¶
Thayer, Edwin H.
Thompson, C. H.‡ ¶
Vosmos, Charles A.
Vosmos, Frederick J.
Winberg, August ‡
Wood, Alexander H.
Wood, Frank ‡ ¶
Woodworth, W. L.‡ ¶

Weston.

Class B.

Card, J. L. §

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Fifth inspection.
¶ Reported favorably on all previous inspections.

A STUDY OF THE EFFICIENCY OF CERTAIN METHODS FOR THE SANITARY CONTROL OF SWIMMING POOLS.[1]

FROM THE LABORATORIES OF THE MASSACHUSETTS STATE BOARD OF HEALTH.

By H. W. CLARK AND STEPHEN DEM. GAGE.

A question of sanitary importance which is beginning to attract attention is that of the hygiene of swimming pools. Formerly such pools were found only in connection with a few of the larger athletic clubs or bathing establishments, but within the past few years a swimming pool has come to be considered a necessary adjunct to a well-equipped gymnasium, and the number of persons who use such pools has increased rapidly.

While the question of the sanitary control of a swimming pool is essentially a water-supply problem, it differs in many respects from that of the control of a domestic water supply. In the distribution system of a public water supply, a pure water, or one which has been freed from pollution, can be protected from further pollution until it reaches the consumer. In a swimming pool, however, each bather introduces a certain amount of pollution into the water, and not only is there always the possibility that infectious material introduced in this way may be transferred directly from one bather to another, but the list of diseases which may be transmitted through the medium of the swimming pool includes a number which do not ordinarily have to be guarded against in the case of a domestic water supply. In addition, the requirements as to the appearance of the water are greater in the case of the swimming pool, and a water which would pass without criticism as a domestic supply might be objectionable because of its color or turbidity when viewed in a swimming pool against a background of white tile.

REVIEW OF SWIMMING POOL INVESTIGATIONS.

Pollution of Swimming Pools. Transmission of Disease. Methods of Control.

The publication early in 1910 of the studies by Burrage of the pool at Purdue University marks practically the beginning of interest in swimming-pool sanitation in this country. Shortly after this, Kister and Fromme published the results of a five years' investigation of the public swimming baths at Hamburg, Germany, and Bunker published the results of an investigation of the swimming pool at Brown University.

[1] Details of this investigation will be found in the annual report of the State Board of Health for 1912.

These initial studies appear to have aroused considerable interest in the subject, and during 1911 and 1912 the results of investigations of swimming pools at Chicago University by Atkins, at Yale University by Retger and Markley, at Northwestern University by Lewis, at the Brooklyn Polytechnic Institute by M. C. Whipple, and at the University of Wisconsin by Tully and Ravenel were reported, and a study of a number of swimming pools in and about New York City was published by Mannheimer.

The impurities introduced into a swimming pool by the bathers consist of hair, particles of skin, fibers from the bathing costumes, soluble organic matters and salts, and bacteria and other microscopical organisms. The insoluble matters on settling out tend to accumulate in patches on the bottom and give the pool an unclean appearance, while the salts and other soluble matters, which are probably harmless in themselves, make the water a better medium for the development of bacteria and other micro-organisms. The bacterial content of the water is the question of greatest importance, since it may directly affect the health of the persons using the pool. In the studies previously mentioned it was demonstrated that not only are many bacteria introduced into the water by the bathers, but also that there may be a considerable multiplication of bacteria in the water when the pool is not in use. In their studies of the Hamburg baths, Kister and Fromme found that more bacteria were introduced into the water by women than by men, but that the increase in bacteria was not always proportional to the number of either class of bathers. Roberts calls attention to the fact that a multiplication of bacteria is one of the factors in the self-purification of water, and states that if disinfectants are to be added the process should be so conducted as to destroy the pathogenic organisms without interfering with those bacteria which are instrumental in the self-purification of the water. Both Burrage and Bunker note that the saprophytic bacteria multiplied much more rapidly in the water when the temperature of the swimming pool was increased above 70–71° F.

The subject is new, and there is little direct statistical evidence as to the agency of the swimming pool in the transmission of disease. In 1908 Cobb reported certain cases of nasal infections which he claimed to have traced directly to the use of swimming pools. Burrage states that epidemics of colds and sore throat are apparently traceable to the use of the swimming pool at Purdue University. Bunker states that at Brown University no epidemics could be attributed directly to infection in the swimming pool, but that affections of the nose and ear were occasionally found among members of the swimming team. Lewis notes the prevalence of grippe, colds, sore throat and some cases of pneumonia at

Northwestern University which were rather strikingly restricted to users of the swimming pool, and Whipple notes similar infections among the users of the Brooklyn pool. Most swimming pools of modern construction have troughs along one or both sides into which bathers are supposed to expectorate when necessary, but in some of the older pools there is no such provision. Only 15 of the 35 swimming pools studied by Mannheimer had definite provisions for expectoration. All swimmers take more or less water into the mouth and nose, which is ejected into the pool, and even in those pools in which expectoration gutters are provided some mucus may be introduced into the water in this manner. The chance of infection is increased by the fact that the sputum does not readily become dissolved and disseminated through the water, and it is quite possible that a bather might take into his mouth with the water a considerable dose of infectious matter recently ejected by another bather.

Both Whipple and Roberts have called attention to the possibility of the transmission of intestinal and venereal diseases through the swimming pool, and the possibility of the transmission of skin diseases is also apparent. Uncleanly persons and those who have a certain physical weakness may emit more or less urine into the water while bathing, and when the probable number of persons who are carriers of typhoid or of other infectious germs is taken into consideration, it is quite evident that there may be some danger from this source. At most of the swimming pools for men nude bathing only is permitted, and well-developed cases of venereal or skin diseases could hardly escape detection, with the result that the infected person would be excluded from the pool, but where bathing suits are permitted these diseases might escape detection and be spread from one bather to another through the water. The probability of the contamination of the water with any of these diseases to such an extent that the health of the bathers in general is endangered appears to be relatively slight, however, if proper precautions are taken to keep the water of good quality.

The measures taken at different swimming pools to control the quality of the water and to prevent the dissemination of disease vary widely. If there is an abundant private supply of pure water the pool may be emptied, cleaned and refilled each day. Undoubtedly this is the most cleanly method of operation. When the water is taken from the city mains, however, the cost of the water for frequent refilling is an item for serious consideration, and even when there is a private water supply the expense of heating the fresh water to the desired temperature must be taken into account. Mannheimer reports that of the 35 swimming pools from which he obtained statistics, only 1 was refilled every day,

26 were refilled at intervals of from two to seven days, 6 were refilled at intervals of from two to three weeks, 1 was refilled only once in twelve weeks, while in another the water was never changed. At 22 of these pools the water for refilling was taken from the city mains.

Unless the pool is emptied and refilled with fresh water at frequent intervals, some method of purifying the water is necessary. Kister and Fromme experimented with aeration and low-rate filters of coke, gravel and sand with more or less success. Bunker reports that at Brown University the water in the pool could not be kept clear and colorless by the use of slow sand filters, but that with high-rate filters and coagulation with sulphate of alumina the appearance of the pool water was successfully maintained, and in the other pools noted this method appears to have been the one employed. Judging from the various published results and our own investigations, however, filtration as practiced at the pools, even with the aid of coagulants, cannot be relied upon to keep the bacterial content of the water within safe limits, and disinfection must be resorted to at more or less frequent intervals. It must not be inferred from this that filtration is not advisable or that the filters cannot purify the water which comes to them. If all of the water in the pool could be withdrawn, passed through properly designed and operated filters and returned to the pool at reasonably frequent intervals, there is little doubt that a clean water of low bacterial content could be maintained. Under existing practice, however, water is drawn from one part of the pool, filtered and returned to another part where it becomes mixed with the contaminated water; and even when the pool is not in use the result is only a gradual dilution of the impure water in the pool with filtered water.

Hypochlorites have been used for disinfecting water for some years, but Burrage appears to have been the first to apply the process to the control of the bacterial content of a swimming pool. The apparent simplicity of this process has led to its adoption at other swimming pools, and most of the recent swimming-pool literature has been largely a record of experiments to determine the best manner of using hypochlorites. The whole subject of swimming-pool sanitation is of such recent origin, however, that there are many pools where neither filtration nor disinfection is practiced. Mannheimer found that 19 of the 35 pools which he investigated were equipped with some form of filters, but that only 6 used chemical disinfection, and in only 2 of these 6 was the disinfectant added regularly at stated intervals.

Most modern swimming pools have certain provisions which aim to prevent the contamination of the water. At many of the swimming pools the walks are so constructed that any water splashed upon them

drains away from the pool; expectoration in the pool is prohibited and nude bathing for men is the general rule. At many places each bather is required to take a preliminary bath before entering the pool, and much dirt is thereby prevented from entering the water, but unless a conscientious attendant is constantly on duty this preliminary bath may be very superficial with many of the bathers. Medical examination of the persons using the pool is required in some cases, but such examinations are usually made at such infrequent intervals as to provide only a small measure of safety from infection. Of the 35 swimming pools reported by Mannheimer, at only 23 was a medical examination made before a person was permitted to use the pool, and with very few exceptions no subsequent medical examination was made. At only 11 of these pools was there any inspection of those entering, and at only 1 was every person required to pass through the shower room on the way to the pool.

Studies of the Andover and Lawrence Swimming Pools.

During the past eleven months an investigation has been in progress at the Lawrence Experiment Station to determine the value of the methods employed at two different swimming pools to control the quality of the water, and to ascertain in what way the efficiency of those methods might be improved. Throughout the investigation routine determinations have been made at frequent intervals of the total numbers of bacteria on agar at room temperature, the total and red colonies on litmus lactose agar at body temperature, and of the presence of B. coli in .01, 0.1, 1, 10 and 100 cubic centimeters of the water in each pool. In addition, partial chemical analyses have been made upon many of the samples, and complete chemical analyses have been made occasionally. No attempt has been made to search for pathogenic bacteria or for bacteria of other specific types, as it was evident that the results would not be commensurate with the large amount of time required. Throughout the investigation every facility has been offered by the directors of these two pools, and changes in the operating methods have been willingly made in order that the effect of these changes might be studied.

Construction and Operation of Andover and Lawrence Pools.

One of the pools studied is located at Phillips Academy for boys at Andover, and the other at the Lawrence Y. M. C. A. The Andover pool is 75 feet long, 30 feet wide and from 4 to 8 feet deep, and as ordinarily used contains about 88,000 gallons of water. The Lawrence pool is 60 by 20 feet in area with a depth of from 3 to 7 feet and a capac-

ity of about 46,000 gallons. The Andover pool was first put into operation on Dec. 1, 1911, and the Lawrence pool on Dec. 7, 1911. Both pools are of concrete construction lined with white tile, are provided with expectoration troughs and with gutters to prevent water from the sidewalks from draining back into the pool, and both are well ventilated and heated and so located that they receive abundant natural light. The methods provided for purifying the water and for maintaining a circulation within the pool are the same in each case. The water is drawn from the deepest part of the pool by centrifugal pumps, treated with sulphate of alumina, passed through high-rate pressure filters and returned to the pool through a number of openings located just below the normal water level at the opposite end. At the Lawrence pool soda ash has been regularly added to the water as it flows to the filters. At Andover soda ash has been added directly to the pool once each week. At Andover the filters have been run about ten hours each day, the average volume of water filtered daily being about 68,000 gallons, or about 77 per cent. of the normal capacity of the pool. The filters at the Lawrence pool have been run about eight hours each day, the average volume of water filtered daily being about 31,000 gallons, or about two-thirds of the capacity of the pool.

In addition to filtration the water of each pool has been disinfected with calcium hypochlorite. At the time the investigation of the Andover pool was begun the disinfectant was being added only to the water flowing to the filters, but after February 1 hypochlorite was added directly to the pool each morning. When the study was begun, hypochlorite of lime was being added directly to the Lawrence pool at intervals of about ten days, but after April 1, 1912, the pool was treated regularly three times each week. Prior to Jan. 1, 1913, the hypochlorite was added in the morning, and after that date at night, immediately after the pool was closed. All the water used in these pools is taken from the public supply. At Andover about 9,000 gallons of fresh water, or about 10 per cent. of the capacity of the pool, is added daily, while at Lawrence about 6,000 gallons of fresh water, or about 13 per cent. of the capacity of the pool, is added once each week. The temperature of the water has been kept at about 70° F. in the Andover pool and at about 74° F. in the Lawrence pool. The sides and bottom of each pool are cleaned daily with long-handled squeegees, the dirt being pushed forward to the outlet where it mixes with the water flowing to the filters.

The Andover pool is used every day while school is in session, and during the summer vacation was opened to the public certain hours each day except Sunday. The average attendance was about 41 while school was in session and about 80 during the summer. The Lawrence

pool is used six days each week, no bathing being permitted on Sunday. The average daily attendance is about 125. Nude bathing only is permitted as a rule in each of these pools, and all persons are required to take a shower bath with soap before entering the pool. At times, during swimming exhibitions, the rule as to nude bathing is relaxed in both pools, and during the summer, when the Andover pool was opened to the general public, suits were worn during the women's bathing hours.

At Andover the pool is under the control of the physical director of the school, who is a practicing physician, and supervision is maintained over the health of the bathers. Each student is required to undergo a medical examination at the beginning of the year, and to report illness of any sort to the physical director. It has thus been possible to exclude from the pool not only those having infectious or contagious diseases, but also those temporarily afflicted with colds or minor infections. No medical examination was required of the townspeople, who used the pool during July and August, and the only supervision was that given by the swimming instructor who was in charge of the pool. No medical examination is required of persons using the Lawrence pool, and there is no supervision over the health of the bathers except such as can be given by the swimming instructor during such times as he is on duty.

. . . .

Summary and Conclusions.

The results of this investigation show that by the methods of filtration followed the water in swimming pools can be kept in satisfactory condition as regards color. The bacterial quality of the water, however, has not been controlled adequately by these filters.

The results obtained at the Andover pool, when the disinfectant was added to the water only as it flowed to the filters, are so few in number that they are not conclusive. It is evident, however, that as some portions of the pool might not on occasion become completely disinfected, this method of applying the hypochlorite is not advisable. The results from both pools also show quite clearly that occasional disinfection or regular disinfection, even at short intervals, cannot be relied upon to maintain a water of low bacterial content. The comparative value of daily disinfection at the Andover pool and disinfection three times weekly at the Lawrence pool is difficult to determine because the latter was smaller, was used by more bathers and required much larger amounts of disinfectant. It is probable, however, that somewhat more uniform results might have been obtained at the Lawrence pool had the water been treated daily with disinfectant instead of every other day. The results obtained from this pool during the latter part of the investiga-

tion, when the disinfectant was applied at night, were somewhat more uniform than were those obtained after the pool had been allowed to stand over night before treatment.

In interpreting the results of this investigation, the amount of success to be attributed to disinfection at different times will depend somewhat upon the point of view. At times the water from both swimming pools contained small numbers of bacteria and were free from B. coli, so that at such times, judged by the usual standards, they may be said to have been of good bacterial quality. At other times large numbers of bacteria were found. There is no reason to doubt, however, that complete sterilization could have been accomplished by the addition of a sufficient quantity of hypochlorite of lime, and a small excess of this disinfectant in the water would probably not be prejudicial to the health of the persons bathing in it. On the other hand, the odor and taste imparted to the water by such an excess are objectionable, and at both Andover and Lawrence complaints have been made at times of smarting of the eyes, due, undoubtedly, to the free chlorine present. It is evident, then, that in the water of swimming pools, as in drinking waters, the amount of hypochlorite of lime which can be used is limited to an amount which can be absorbed and decomposed by the water, and that this limit was reached at both the Andover and Lawrence pools during a considerable portion of the investigation.

In drinking waters large growths of bacteria have been frequently noted after treatment with disinfectants, but in this case a distinction can readily be made between the increase due to pollution and that due to harmless saprophytic bacteria developing after disinfection. In the swimming pool the conditions are particularly favorable for the development of types of bacteria which are not affected by the disinfectant used, but since bacterial increase due to pollution of the water by the bathers and the growth of saprophytic forms may occur simultaneously, the relative importance of either bacterial source cannot be determined. In most of the swimming-pool samples showing high-room temperature counts the body-temperature counts were low and B. coli were seldom present even in 100 cubic centimeters of the water. If we assume that the high counts were caused by growths of harmless saprophytic bacteria, and there is much evidence to support this assumption, the water in these two swimming pools may be said to have been of good bacterial quality most of the time. The question as to whether the water at other times was of such poor quality as to be a menace to the health of the bathers, and as to what limits should be placed on the bacterial count of swimming-pool waters, cannot be answered until more complete data concerning the bacteriology and epidemiology of such waters are available.

It is evident, finally, that under the conditions prevailing in these swimming pools water enters the ears, noses and mouths of the bathers, — water that has been in contact with some or all portions of the bodies of other bathers. It is apparent, moreover, that, notwithstanding filtration and disinfection, large numbers of bacteria are present at times in the water, and in the case of chronic-disease carriers may be readily transferred from one bather to another. There is, indeed, some evidence, as already mentioned, tracing certain epidemics to swimming pools.

FOR MOTHERS WITH LITTLE BABIES.[1]

How to take Care of Baby's Health.

The Best Food is Mother's Milk.

Nurse your baby for the first twelve months. If you do, its chances for life and health will be ten times greater than the chances of a bottle-fed baby.

If you think you cannot nurse your Baby

consult your doctor before making any change. The question is too serious for you to decide by yourself.

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[1] Taken in part from a circular for mothers issued by the Boston board of health, together with suggestions from the Milk and Baby Hygiene Association and the Massachusetts Commission for the Blind.

Never wean a baby less than a year old except by the doctor's advice. Do not wean a baby in hot weather.

Nurse your Baby at Regular Times,

but never oftener than once in two hours. Baby should sleep six hours or more each night without being waked. Wake baby promptly, if asleep, when the regular time for nursing comes.

Give baby all the cool boiled water it wants.

Why Babies cry.

Baby may cry because you feed it too often or too much; because it wants water; because it aches from too much handling; or because it is too hot. Flannel shirts in summer bring prickly heat.

Baby does not cry without a reason.

Do not feed baby at irregular times in order to stop its crying.

Milk.

If you have to feed the baby on anything else besides mother's milk, consult your doctor before giving baby cow's milk or any patent food.

A little baby cannot digest whole milk, so the milk must be modified under a doctor's orders.

Buy good, clean milk for the baby.

Modify milk just as the doctor directs.

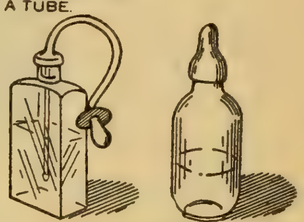
Do not trust the advice of neighbors.

Keep the milk cold, covered and clean. Put it into clean feeding-bottles.

Never use a feeding-bottle with a tube on it. Rinse the nipple and the bottle with clear, cold water immediately after use.

Never give baby cheap, dirty milk or coffee, beer, syrups or solid food.

Never give the baby patent medicines or drugs of any kind, except under a doctor's orders.



While you are nursing your Baby

take care of your health. Drink plenty of milk. Eat simple, nourishing food. Do not work too hard and become overtired.

Do not worry.

If possible, do not do any hard work for at least one month after baby is born.

Clothing.

In hot weather one thin piece is enough. Baby feels heat more than you do. Keep baby cool.

Fresh Air.

Air baby's room often, even in cold weather. Always keep a window open in baby's room while baby is asleep.

In summer, sleep on the roof or in the yard with baby if you can.

How Baby should sleep.

No baby should sleep with another person. Let baby sleep in a crib or bed by itself, and in the coolest, quietest room you have.

Keep baby out of the kitchen.

Keep flies out of the house and protect baby from them by netting.

Take baby out of doors as much as possible.

Bathing.

Wash baby all over every morning with lukewarm water. In hot weather sponge baby often with cool water.

If Baby is sick, vomits or has Diarrhœa

stop feeding altogether; give baby boiled water instead and take baby to your doctor or to a children's hospital or good dispensary.

Take Care of Baby's Eyes.

Your doctor will wash baby's eyelids as soon as baby is born, and he will open the eyes and drop into each eye some medicine which is furnished free by the State. The medicine is used to prevent the spread of disease which might otherwise cause blindness.

Baby's "sore eyes" is not "just a cold." It is usually very contagious and may make baby blind.

It sometimes happens that the use of the medicine causes a little redness and soreness of the eyes. If baby's eyes get even a little sore, notify the board of health at once. The law requires you to do so, and by obeying you may save your child from lifelong blindness.

[The last page is left blank so that on it can be written, printed or stamped the addresses of agencies of value to mothers who have young babies; for example, milk stations, visiting nurses, city doctors, children's dispensaries or hospitals, and the local board of health.]

EXPLODING GOLF BALLS AS A CAUSE OF ACCIDENTS.

Two cases of injury to eyesight have come to the notice of the State Board of Health recently through the explosion of certain varieties of golf balls. It seems that in the manufacture of these balls a small rubber bag about 1 inch in diameter is filled with solutions of differing type. The bag is then wound with rubber thread until it has become nearly as large as is desired in the finished product. It is then placed in the gutta-percha cover. The rubber windings cause great pressure upon the bag, and if this pressure is relieved at one point by cutting, the bag bursts and in the bursting the contained solution is scattered into the face of the person holding it. In view of these accidents the chief analyst of the Board has examined a number of golf balls, and those thus far discovered with liquid centers are given in the list below: —

Name.	Manufacturer.	Nature of Center.
The Colonel (Star),	St. Mungo Manufacturing Company,	Zinc chloride solution.
The Colonel (Arch),	St. Mungo Manufacturing Company,	Zinc chloride solution.
Water Core,	St. Mungo Manufacturing Company,	Water.
Zodiac,	Martins, England,	Soft soap and talc.
Bantam,	Goodrich Company,	Soft soap and red lead.

NEW LEGISLATION.

Acts of 1913, Chapter 538.

An Act relative to the sale of eggs taken from cold storage.

Be it enacted, etc., as follows:

Section 1. Whenever eggs that have been in cold storage are sold at retail, or offered or exposed for sale, the basket, box or other container in which the eggs are placed shall be marked plainly and conspicuously with the words "cold storage eggs", or there shall be attached to such container a placard or sign having on the said words. If eggs that have been in cold storage are sold at retail or offered or exposed for sale without a container, or placed upon a counter or elsewhere, a sign or placard, having the words "cold storage eggs" plainly and conspicuous marked upon it, shall be displayed in, upon or immediately above the said eggs; the intent of this act being that

cold storage eggs sold at retail or offered or exposed for sale shall be designated in such a manner that the purchaser will know that they are cold storage eggs. The display of the words "cold storage eggs", as required by this act, shall be done in such a manner as is approved by the state board of health.

SECTION 2. Violation of any provision of this act shall be punished by a fine of not less than ten dollars nor more than five hundred dollars for each offence. [*Approved April 25, 1913.*

ACTS OF 1913, CHAPTER 570.

AN ACT RELATIVE TO THE BRANDING OF CERTAIN CARCASSES.

Be it enacted, etc., as follows:

SECTION 1. Chapter two hundred and forty-eight of the acts of the year nineteen hundred and twelve, as amended by chapter six hundred and three of the acts of the same year, is hereby further amended by striking out section three and inserting in place thereof the following: — *Section 3.* This act shall take effect on the first day of July, nineteen hundred and thirteen.

SECTION 2. No person shall be punished for any violation of the provisions of said chapters committed before the passage of this act. This act shall apply to any proceedings pending under the said chapters.

SECTION 3. This act shall take effect upon its passage. [*Approved May 2, 1913.*

ACTS OF 1913, CHAPTER 585.

AN ACT RELATIVE TO THE SALE OF INSECTICIDES.

Be it enacted, etc., as follows:

SECTION 1. Section two of chapter two hundred and thirteen of the Revised Laws, as amended by chapter two hundred and sixty-three of the acts of the year nineteen hundred and twelve, is hereby further amended by adding at the end thereof the words: — Nor shall the provisions of this section apply to sales of compounds containing not more than fifty per cent of sodium fluorine intended solely for the destruction of roaches, ants or other household insects when sold in sealed metal packages containing not less than one fourth of a pound plainly labeled in such a manner as to show the purposes for which the preparation is intended.

SECTION 2. This act shall take effect upon its passage. [*Approved May 2, 1913.*

ACTS OF 1913, CHAPTER 647.

AN ACT RELATIVE TO THE SALE OF CANDY CONTAINING AICOHOL.

Be it enacted, etc., as follows:

Chapter two hundred and thirteen of the Revised Laws is hereby amended by striking out section four and inserting in place thereof the following: — *Section 4.* Whoever sells to a person any candy enclosing or containing

liquid or syrup containing more than one per cent of alcohol shall be punished by a fine of not more than one hundred dollars for each offence. [*Approved May 13, 1913.*

Acts of 1913, Chapter 650.

An Act to regulate the manufacture of sausages.

Be it enacted, etc., as follows:

Section 1. Chapter two hundred and thirteen of the Revised Laws is hereby amended by striking out section nine and inserting in place thereof the following: — *Section 9.* It shall be unlawful in the manufacture of sausages to use any coloring matter. Sausages shall not contain cereal in excess of two per cent. When cereal is added its presence shall be stated on the label or on the product. Water or ice shall not be added to sausage except for the purpose of facilitating grinding, chopping and mixing, in which case the water or ice shall not exceed three per cent, except as hereinafter provided. Sausages of the class which are smoked or cooked, such as Frankfort style, Vienna style, and Bologna style, may contain added water in excess of three per cent, but not in excess of an amount sufficient to make the product palatable. When water, in excess of three per cent, and cereal are added to this class of sausages the statement "Sausage, water and cereal" shall appear on the label or on the product, but when no cereal is added the addition of water need not be stated.

Section 2. It shall be unlawful to sell sausages manufactured contrary to the provisions of this act.

Section 3. Whoever violates the provisions of this act shall be punished by a fine of not more than one hundred dollars for each offence. [*Approved May 13, 1913.*

Acts of 1913, Chapter 654.

An Act relative to the sale and use of eggs unfit for food.

Be it enacted, etc., as follows:

Section 1. It shall be unlawful for any person, firm or corporation or any officer, agent or employee thereof, to sell, offer for sale, expose for sale, or have in possession with intent to sell, eggs that are unfit for food within the meaning of this act.

Section 2. This act shall apply to eggs which, either before or after removal from the shell, are wholly or partly decayed or decomposed, and to eggs in the fluid state, any part of which is wholly or partly decayed or decomposed, and to eggs, in the fluid state or otherwise, that are mixed with parts of eggs which are derived from eggs that are wholly or partly decayed or decomposed. This act shall also apply to frozen masses of broken eggs, if the mass contains eggs that are wholly or partly decayed or decomposed, or that are mixed with parts of eggs that have been taken from eggs that were wholly or partly decayed or decomposed.

Section 3. It shall be unlawful for any person, firm or corporation, or

any officer, agent or employee thereof, to use eggs that are either wholly or partly decayed or decomposed in the preparation of food products. And it shall be unlawful to deliver, sell, purchase or accept wholly or partly decayed or decomposed eggs in or at any establishment where food products are prepared or manufactured.

SECTION 4. Violation of any provision of this act shall be punished by a fine of not less than ten nor more than one thousand dollars, or by imprisonment for not less than three months, or by both such fine and imprisonment.

SECTION 5. The state board of health shall enforce the provisions of this act.

SECTION 6. Nothing in this act shall be construed to prohibit the purchase, sale or possession for other than food purposes of rotten, decayed or partly decayed eggs which are unfit for food.

(*The foregoing was laid before the Governor on the eighth day of May, 1913, and after five days it had "the force of a law", as prescribed by the Constitution, as it was not returned by him with his objections thereto within that time.*)

ACTS OF 1913, CHAPTER 670.

AN ACT TO FACILITATE THE WORK OF THE STATE BOARD OF HEALTH IN THE INVESTIGATION AND PREVENTION OF INFECTIOUS OR CONTAGIOUS DISEASES.

Be it enacted, etc., as follows:

Chapter seventy-five of the Revised Laws is hereby amended by striking out section eight and inserting in place thereof the following: — *Section 8.* If smallpox or any other contagious or infectious disease declared by the state board of health to be dangerous to the public health exists or is likely to exist in any place within the commonwealth, the state board shall make an investigation thereof and of the means of preventing the spread of the disease, and shall consult thereon with the local authorities. It shall have co-ordinate powers as a board of health, in every city and town, with the board of health thereof, or with the mayor and aldermen of a city or the selectmen of a town in which there is no such board. It may require the officers in charge of any city or state institution, charitable institution, public or private hospital, dispensary or lying-in hospital, or any local boards of health or the physicians in any city or town to give notice of cases of any disease declared by the state board of health to be dangerous to the public health. Such notice shall be given either in the manner prescribed in sections forty-nine, fifty and fifty-two of chapter seventy-five of the Revised Laws, as amended by chapter four hundred and eighty of the acts of the year nineteen hundred and seven, or in such other manner as the state board of health may deem advisable. If any such officer, board or physician refuses or neglects to give such notice, he or they shall forfeit not less than fifty nor more than two hundred dollars for each offence. [*Approved May 16, 1913.*

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OF THE

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OF

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The State Board of Publication.

RETURNS OF DISEASES.

Cases of Diseases declared by the State Board of Health to be Dangerous to the Public Health.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending —					
	May 3.	May 10.	May 17.	May 24.	May 31.	Total.
Diphtheria,	125	106	143	136	134	644
Measles,	1,073	1,126	908	968	900	4,975
Scarlet fever,	150	156	149	168	168	791
Typhoid fever,	26	18	32	20	10	106
Tuberculosis, pulmonary (or not classified),	148	201	180	168	146	843
Tuberculous meningitis,	2	1	2	5	3	13
Tuberculosis, other forms,	6	9	6	8	2	31
Cerebro-spinal meningitis,	2	7	6	1	3	19
Whooping cough,	101	68	89	59	65	382
Varicella,	74	85	55	71	43	328
Ophthalmia neonatorum,	54	53	52	47	39	245
Anterior poliomyelitis,	2	–	–	2	3	7
Smallpox,	6	4	3	–	2	15
Trachoma,	3	3	3	3	1	13
Actinomycosis,	–	–	–	–	1	1

Cases of Infectious Diseases not included in the Above Table.

[Cases not notifiable under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending —					
	May 3.	May 10.	May 17.	May 24.	May 31.	Total.
Mumps,	6	3	6	3	3	21
Erysipelas,	2	3	–	2	–	7
Syphilic osteomyelitis,	–	–	–	1	–	1
Tonsillitis,	–	–	8	76	42	126

RETURNS OF DEATHS.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Cities and Towns of more than 10,000 Population.

[Under the provisions of chapter 210, Acts of 1913.]

Week ending May 3, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, other forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	33[1] 37[2]	21[1] 25[2]	–	–	3[1] 3[2]	–	3[1] 3[2]	1[1] 1[2]	5[1] 5[2]	–
Worcester,	145,986	4	2	–	–	–	–	–	2	–	–
Fall River,	119,295	14[3]	4	1	–	–	–	1	6	1	–
Lowell,	106,294	5	1	2	1	–	–	–	1	–	–
Cambridge,	104,839	8	6	–	1	1	–	–	–	–	–
New Bedford,	96,652	7	2	3	1	1	–	–	–	–	–
Lynn,	89,336	4	2	–	–	–	1	–	–	1	–
Springfield,	88,926	6	3	–	–	–	2	–	–	–	1
Lawrence,	85,892	9	5	2	–	1	–	–	1	–	–
Somerville,	77,236	1	1	–	–	–	–	–	–	–	–
Holyoke,	57,730	6	2	1	–	–	–	2	1	–	–
Brockton,	56,878	1	1	–	–	–	–	–	–	–	–
Malden,	44,404	–	–	–	–	–	–	–	–	–	–
Haverhill,	44,115	–	–	–	–	–	–	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	1	1	–	–	–	–	–	–	–	–
Fitchburg,	37,826	2	1	–	–	1	–	–	–	–	–
Taunton,	34,259	–	–	–	–	–	–	–	–	–	–
Everett,	33,484	2	1	–	1	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	1	1	–	–	–	–	–	–	–	–
Pittsfield,	32,121	–	–	–	–	–	–	–	–	–	–
Waltham,	27,834	2	1	–	–	1	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	3	2	1	–	–	–	–	–	–	–
Gloucester,	24,398	1	–	–	–	1	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	2	–	–	–	1	–	–	–	–	1
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	1	1	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	1	–	–	–	1	–	–	–	–	–
Peabody,	15,721	1	–	1	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	3	3	–	–	–	–	–	–	–	–
Clinton,	13,075	1	–	–	1	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	2	–	–	1	–	–	1	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	1	1	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,058,381	126	66	11	6	11	3	7	12	7	2

[1] Nonresidents deducted. [2] Total deaths. [3] Including one death from tetanus.

Week ending May 10, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, other forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	37[1]	24[1]	2[1]	1[1]	4[1]	–	3[1]	1[1]	1[1]	–
		42[2,3]	28[2]	2[2]	1[2]	4[2]	–	3[2]	1[2]	2[2]	–
Worcester,	145,986	4	4	–	–	–	–	–	–	–	–
Fall River,	119,295	7	4	–	–	–	1	–	1	1	–
Lowell,	106,294	7	5	1	–	1	–	–	–	–	–
Cambridge,	104,839	–	–	–	–	–	–	–	–	–	–
New Bedford,	96,652	7	4	–	1	1	–	–	1	–	–
Lynn,	89,336	9	5	–	1	–	2	1	–	–	–
Springfield,	88,926	2	1	–	–	–	–	–	–	–	1
Lawrence,	85,892	2	1	–	–	–	–	–	1	–	–
Somerville,	77,236	2	2	–	–	–	–	–	–	–	–
Holyoke,	57,730	3	1	–	–	–	1	–	1	–	–
Brockton,	56,878	–	–	–	–	–	–	–	–	–	–
Malden,	44,404	–	–	–	–	–	–	–	–	–	–
Haverhill,	44,115	2	–	–	–	–	–	–	1	–	1
Salem,	43,697	1	1	–	–	–	–	–	–	–	–
Newton,	39,806	1	–	1	–	–	–	–	–	–	–
Fitchburg,	37,826	1	1	–	–	–	–	–	–	–	–
Taunton,	34,259	1	–	1	–	–	–	–	–	–	–
Everett,	33,484	–	–	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	3	3	–	–	–	–	–	–	–	–
Pittsfield,	32,121	2	1	–	–	–	1	–	–	–	–
Waltham,	27,834	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	1	–	–	–	–	–	–	–	–	1
Gloucester,	24,398	1	1	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	1	1	–	–	–	–	–	–	–	–
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	1	–	1	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	2	2	–	–	–	–	–	–	–	–
Attleborough,	16,215	1	1	–	–	–	–	–	–	–	–
Westfield,	16,044	4	3	–	–	–	–	1	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	2	1	–	–	–	–	–	–	1	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	1	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	1	1	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	1	–	–	–	–	–	–	–	–	1
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	2	1	1	–	–	–	–	–	–	–
Wakefield,	11,404	1	1	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,039,172	115	74	7	3	6	5	5	6	4	4

[1] Nonresidents deducted. [2] Total deaths. [3] Including one death from anterior poliomyelitis.

Week ending May 17, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, other forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	38[1] 39[2]	25[1] 26[2]	1[1] 1[2]	2[1] 2[2]	1[1] 1[2]	– –	3[1] 3[2]	4[1] 4[2]	1[1] 1[2]	1[1] 1[2]
Worcester,	145,986	5	5	–	–	–	–	–	–	–	–
Fall River,	119,295	14	5	–	–	2	1	2	4	–	–
Lowell,	106,294	7	5	–	–	1	–	–	1	–	–
Cambridge,	104,839	6	3	–	–	2	–	–	1	–	–
New Bedford,	96,652	3	2	–	–	1	–	–	–	–	–
Lynn,	89,336	3	2	–	–	–	–	–	1	–	–
Springfield,	88,926	2	1	–	–	–	–	–	–	–	1
Lawrence,	85,892	4	2	1	–	–	–	–	–	1	–
Somerville,	77,236	2	2	–	–	–	–	–	–	–	–
Holyoke,	57,730	4	1	1	1	–	–	1	–	–	–
Brockton,	56,878	3	3	–	–	–	–	–	–	–	–
Malden,	44,404	3	2	–	–	–	–	–	1	–	–
Haverhill,	44,115	–	–	–	–	–	–	–	–	–	–
Salem,	43,697	1	1	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	1	–	–	–	–	–	–	1	–	–
Taunton,	34,259	2[3]	1	–	–	–	–	–	–	–	–
Everett,	33,484	1	–	–	–	–	–	–	–	1	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	2	1	–	–	–	–	–	1	–	–
Pittsfield,	32,121	–	–	–	–	–	–	–	–	–	–
Waltham,	27,834	1	1	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	2	2	–	–	–	–	–	–	–	–
Gloucester,	24,398	1	1	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	2	2	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	1	1	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	1	–	–	–	–	–	1	–	–	–
Newburyport,	14,949	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	1	–	–	–	–	–	1	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	1	1	–	–	–	–	–	–	–	–
Wakefield,	11,404	2	1	–	–	–	–	–	–	–	1
Arlington,	11,187	1	–	–	–	–	–	–	1	–	–
Greenfield,	10,427	1	–	–	1	–	–	–	–	–	–
Winthrop,	10,132	1	–	–	–	–	–	1	–	–	–
Total of reporting towns,	2,136,106	117	71	3	4	7	1	9	15	3	3

[1] Nonresidents deducted. [2] Total deaths. [3] Including one death from tetanus.

Week ending May 24, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, other forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	39[1] 42[2]	27[1] 30[2]	– –	– –	5[1] 5[2]	1[1] 1[2]	1[1] 1[2]	3[1] 3[2]	2[1] 2[2]	– –
Worcester,	145,986	6		–	–	1	–	–	1	–	–
Fall River,	119,295	18	3	–	–	4	1	–	9	1	–
Lowell,	106,294	7	2	–	–	1	1	–	1	1	1
Cambridge,	104,839	4	3	–	–	–	–	–	1	–	–
New Bedford,	96,652	5	1	–	2	–	–	–	1	1	–
Lynn,	89,336	6	3	1	–	1	1	–	–	–	–
Springfield,	88,926	–	–	–	–	–	–	–	–	–	–
Lawrence,	85,892	2	2	–	–	–	–	–	–	–	–
Somerville,	77,236	2	1	1	–	–	–	–	–	–	–
Holyoke,	57,730	1	–	–	–	–	–	1	–	–	–
Brockton,	56,878	4	2	1	–	–	–	–	1	–	–
Malden,	44,404	2	–	–	–	1	–	–	–	–	1
Haverhill,	44,115	2	1	1	–	–	–	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	1	1	–	–	–	–	–	–	–	–
Taunton,	34,259	1	1	–	–	–	–	–	–	–	–
Everett,	33,484	–	–	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	–	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	–	–	–	–	–	–	–	–	–	–
Waltham,	27,834	2	1	–	–	1	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	–	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	1	1	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	–	–	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	1	–	1	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	1	1	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	1	1	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	1	–	–	1	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,883,942	112	60	5	3	14	4	2	17	5	2

[1] Nonresidents deducted. [2] Total deaths.

Week ending May 31, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, other forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	34[1] 38[2,3]	14[1] 16[2]	5[1] 6[2]	1[1] 2[2]	3[1] 3[2]	– –	1[1] 1[2]	4[1] 4[2]	4[1] 4[2]	1[1] 1[2]
Worcester,	145,986	6	5	1	–	–	–	–	–	–	–
Fall River,	119,295	12	2	–	–	3	–	2	5	–	–
Lowell,	106,294	5	2	–	–	2	–	–	–	1	–
Cambridge,	104,839	9	6	–	–	3	–	–	–	–	–
New Bedford,	96,652	5	2	2	1	–	–	–	–	–	–
Lynn,	89,336	3	1	–	–	–	1	–	–	1	–
Springfield,	88,926	1	1	–	–	–	–	–	–	–	–
Lawrence,	85,892	4	2	–	1	–	–	–	1	–	–
Somerville,	77,236	2	2	–	–	–	–	–	–	–	–
Holyoke,	57,730	4	1	–	–	1	–	2	–	–	–
Brockton,	56,878	2	2	–	–	–	–	–	–	–	–
Malden,	44,404	1	–	1	–	–	–	–	–	–	–
Haverhill,	44,115	5	3	–	–	1	–	–	1	–	–
Salem,	43,697	4	3	–	–	–	–	–	–	1	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	–	–	–	–	–	–	–	–	–	–
Taunton,	34,259	1	1	–	–	–	–	–	–	–	–
Everett,	33,484	2	1	–	–	–	–	–	–	1	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	–	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	2	1	–	–	–	–	–	–	–	1
Waltham,	27,834	2	2	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	1	1	–	–	–	–	–	–	–	–
Gloucester,	24,398	2	2	–	–	–	–	–	–	–	–
Medford,	23,150	3	1	1	–	1	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18.219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	1	1	–	–	–	–	–	–	–	–
Peabody,	15,721	1	1	–	–	–	–	–	–	–	–
Melrose,	15,715	1	1	–	–	–	–	–	–	–	–
Woburn,	15,308	1	1	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	1	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	2	1	1	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	1	–	–	1	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	1	–	1	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	1	1	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,173,562	124	64	13	5	14	1	5	11	8	2

[1] Nonresidents deducted. [2] Total deaths. [3] Including one death from anterior poliomyelitis.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Towns of less than 10,000 Population.

[Under the provisions of chapter 210, Acts of 1913.]

DISEASE.	Place.	Week ending — May 3.	May 10.	May 17.	May 24.	May 31.
Tuberculosis, pulmonary (or not classified), . . .	Amesbury, .	2	–	–	–	–
	Amherst, .	–	1	–	–	–
	Blackstone, .	1	–	–	–	–
	Bridgewater, .	–	1	–	1	1
	Danvers, .	–	1	–	–	–
	Douglas, . .	–	1	–	–	–
	Dracut, . .	–	–	–	1	–
	Grafton, . .	–	–	1	–	–
	Harvard, .	–	1	–	–	–
	Maynard, .	–	1	–	1	–
	Middleborough,	–	–	1	–	–
	N. Attleborough,	–	–	–	–	1
	Northbridge, .	–	1	–	–	–
	Oak Bluffs, .	1	–	–	–	–
	Palmer, . .	–	1	–	–	–
	Provincetown, .	–	–	–	1	–
	Saugus, . .	1	–	–	–	–
	Sandwich, .	–	1	–	–	–
	Somerset, .	–	1	–	–	–
	Southbridge, .	–	–	1	–	–
	Spencer, . .	1	–	–	–	–
	Stockbridge, .	–	–	1	–	–
	Stoneham, .	–	1	–	1	1
	Westborough, .	–	–	1	–	–
	West Newbury,	–	–	1	–	–
	Winchester, .	–	–	–	–	1
Total, . .	. . . . .	6	11	6	5	4
Tuberculosis, other forms, . . .	Bridgewater, .	–	–	4	–	–
	Danvers, .	–	–	1	–	–
	Granby, . .	–	–	–	–	1
	Millbury, .	–	1	–	–	–
	Townsend, .	–	–	1	–	–
	Wareham, .	–	–	–	–	1
	Westborough, .	–	–	–	–	–
Total, . .	. . . . .	–	1	6	–	2
Diphtheria, . .	Concord, .	–	–	–	1	–
	Hull, . .	–	–	–	–	1
	Mattapoisett, .	–	1	–	–	–
	Montague, .	–	–	1	–	–
	Palmer, . .	–	–	–	–	1
	Wareham, .	–	–	1	–	–
	Warren, . .	1	–	–	–	–
Total, . .	. . . . .	1	1	2	1	2

DEATHS FROM DISEASES DECLARED BY THE STATE BOARD OF HEALTH TO BE DANGEROUS TO THE PUBLIC HEALTH IN TOWNS OF LESS THAN 10,000 POPULATION — *Concluded.*

DISEASE.	Place.	Week ending — May 3.	May 10.	May 17.	May 24.	May 31.
Typhoid fever,	Athol,	–	–	–	–	1
	Dracut,	–	–	–	–	1
	Provincetown,	–	–	–	–	1
Total,	. . . .	–	–	–	–	3
Scarlet fever,	Berlin,	–	1	–	–	–
	Dudley,	–	–	–	1	–
Total,	. . . .	–	1	–	1	–
Measles,	Athol,	–	–	1	1	–
	Dartmouth,	–	–	5	–	–
	Hull,	–	–	–	1	1
	Northbridge,	–	1	–	–	–
	Uxbridge,	–	1	–	–	–
	Wareham,	–	1	–	–	–
Total,	. . . .	–	3	6	2	1
Cerebro-spinal Meningitis,	N. Attleborough,	–	1	–	–	–
	Palmer,	–	1	–	–	–
	Spencer,	–	–	1	–	–
Total,	. . . .	–	2	1	–	–
Whooping cough,	N. Attleborough,	–	1	–	–	–
	Watertown,	–	–	–	1	–
	Winchester,	–	–	–	–	1
Total,	. . . .	–	1	–	1	1
Smallpox,	Dana,	–	1	–	–	–
Tetanus,	Franklin,	1	–	–	–	–

REPORT ON INSPECTION OF FOOD AND DRUGS.

Laboratory Examinations of Food and Drugs.

The following summary presents the results of the laboratory examinations during the month of May, 1913, of samples of food and drugs collected by inspectors of the Board: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Butter,	2	–	2	Jams and jellies,	3	–	3
Canned soup,	3	–	3	Lard,	1	–	1
Cider,	1	–	1	Maple sugar,	11	6	17
Coffee,	4	1	5	Maple syrup,	4	–	4
Confectionery,	3	–	3	Meat products: —			
Cream,	10	–	10	Hamburg steak,	1	–	1
Dried fruits,	3	1	4	Sausages,	6	–	6
Drugs,	113	25	138	Tripe,	1	–	1
Flavoring extracts: —				Milk,	643	167	810
Lemon,	6	2	8	Pickles,	1	–	1
Peppermint,	1	–	1	Salad dressing,	1	–	1
Vanilla,	7	2	9	Spices,	1	–	1
Wintergreen,	2	–	2	Tea,	1	–	1
Honey,	4	–	4	Total,	833	204	1,037

The samples of drugs found to be adulterated were alcohol, spirit of anise, spirit of camphor, spirit of wintergreen, spirit of lemon, spirit of peppermint, tincture of iodine and tincture of vanilla.

The cities and towns in which samples were collected were: Beverly, Boston, Braintree, Bridgewater, Brookline, Cambridge, Chelmsford, Chicopee, Clinton, Dalton, Fall River, Framingham, Groton, Hamilton, Holyoke, Lawrence, Lenox, Lowell, Ludlow, Lynn, Malden, Mansfield, Marlborough, Medford, Milford, Newton, North Attleborough, Norwood, Pittsfield, Quincy, Revere, Richmond, Salem, Somerville, Springfield, Stoneham, Taunton, Ware, Wellesley, West Springfield, Westfield, Wilmington, Woburn, Worcester.

Prosecutions for Violations of the Law relating to Food and Drugs.

Eighteen convictions were secured during the month of May, 1913, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Horace S. Blake,	Ashland,	Milk (total solids, 9.64).[1]
2	Horace S. Blake,	Ashland,	Milk (total solids, 10.56).[1]
3	Paul Cunningham,	Bolton,	Milk (skimmed: cans not marked).
4	Christ V. Simon,	W. Boylston,	Milk (total solids, 10.62).[1, 2]
5	Harvey B. Savery,	Pittsfield,	Milk (total solids, 10.58).[1]
6	Charles Benz,	Pittsfield,	Milk (total solids, 10).[1]
7	John C. Benz,	Pittsfield,	Milk (total solids, 10.82).[1]
8	Andrew Doucette,	Woburn,	Milk (total solids, 7.87).[1]
9	Burke Drug Company,	Marlborough,	Tincture iodine (not U. S. P.).
10	Burke Drug Company,	Marlborough,	Spirit peppermint (not U. S. P.).
11	The Mohican Company,	Springfield,	Shrimp (compound of boron).
12	The Mohican Company,	Springfield,	Shrimp (compound of boron).
13	Harrison G. Kennard,	Quincy,	Milk (total solids, 12.04).[3]
14	Harrison G. Kennard,	Quincy,	Milk (total solids, 7.82).[1]
15	Albertus H. Ballou,	Ware,	Milk (total solids, 7.36).[1]
16	G. Edward Winn,	Burlington,	Milk (total solids, 10.66).
17	S. A. Ryan & Co., Inc.,	Springfield,	Alcohol (not U. S. P.).
18	Albert E. Lerche,	Springfield,	Tincture iodine (not U. S. P.).

[1] Appealed. [2] Watered. [3] Skimmed.

Fines imposed, $600.

List of Adulterated or Improperly Labeled Foods, etc., for May, 1913.

The following shows the adulterated or improperly labeled foods, during the month of May, 1913: —

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
540–R	Tincture of iodine,	Albert E. Lerche, Springfield, Mass.,	47 per cent. U. S. P. strength.
20321	Tincture of vanilla,	O'Brien Drug Company, Boston, Mass.,	Not U. S. P.; an artificial extract containing coumarin and vanillin.
3189–S			Total solids, 9.16 per cent.; fat, 3.20 per cent.; contained added water.
3191–S			Total solids, 8.24 per cent.; fat, 2.80 per cent.; contained added water.
3193–S			Total solids, 9.68 per cent.; fat, 3.60 per cent.; contained added water.
3195–S			Total solids, 9.83 per cent.; fat, 3.20 per cent.; contained added water.
3197–S			Total solids, 7.87 per cent.; fat, 2.60 per cent.; contained added water.
3199–S	Milk,	Andrew Doucette, Woburn, Mass.,	Total solids, 8.51 per cent.; fat, 3.20 per cent.; contained added water.
3201–S			Total solids, 7.73 per cent.; fat, 2.40 per cent.; contained added water.
3203–S			Total solids, 10.42 per cent.; fat, 3.90 per cent.; contained added water.
3205–S			Total solids, 11.34 per cent.; fat, 3.40 per cent.; contained added water.
3259–S			Total solids, 11.26 per cent.; fat, 4.00 per cent.; contained added water.
3261–S			Total solids, 8.82 per cent.; fat, 3.10 per cent.; contained added water.

LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR MAY, 1913 — *Concluded.*

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
3263–S	Milk,	Andrew Doucette, Woburn, Mass.,	Total solids, 11.20 per cent.; fat, 4.10 per cent.; contained added water.
3267–S	Milk,	Andrew Doucette, Woburn, Mass.,	Total solids, 11.35 per cent.; fat, 3.60 per cent.; contained added water.
3267A–S	Milk,	Andrew Doucette, Woburn, Mass.,	Total solids, 9.98 per cent.; fat, 2.80 per cent.; contained added water.
3269–S	Milk,	Andrew Doucette, Woburn, Mass.,	Total solids, 10.51 per cent.; fat, 3.40 per cent.; contained added water.
3271–S	Milk,	Andrew Doucette, Woburn, Mass.,	Total solids, 11.36 per cent.; fat, 3.70 per cent.; contained added water.
20238	Milk,	George H. Howland, West Springfield, Mass.,	Total solids, 10.38 per cent.; fat, 3.00 per cent.; contained added water.
666–R	Milk,	Frank Kratzsch, North Westport, Mass.,	Total solids, 12.40 per cent.; fat, 2.90 per cent.; proteins, 3.70 per cent.; skimmed milk.
20216	Milk,	Mrs. Mary Newman, Taunton, Mass.,	Total solids, 12.70 per cent.; fat, 2.90 per cent.; proteins, 3.47 per cent.; skimmed milk.
20334	Milk,	Michael J. Collins, Randolph, Mass.,	Total solids, 11.40 per cent.; fat, 2.80 per cent.; proteins, 3.17 per cent.; skimmed milk.
20335	Milk,	Michael J. Collins, Randolph, Mass.,	Total solids, 12.04 per cent.; fat, 2.90 per cent.; proteins, 3.35 per cent.; skimmed milk.
20228	Milk,	West W. Hudson, West Springfield, Mass.,	Total solids, 12.68 per cent.; fat, 2.90 per cent.; proteins, 3.81 per cent.; skimmed milk.

REPORT ON INSPECTION OF DAIRIES.

During the month of May, 1913, 650 dairies were examined in the following places: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Ashland,	11	7	63.64	4	36.36
Second inspection,	5	4	80.00	1	20.00
Third inspection,	4	3	75.00	1	25.00
Fourth inspection,	1	1	100.00	–	–
Bellingham,	6	2	33.33	4	66.67
Second inspection,	21	16	76.19	5	23.81
Third inspection,	6	6	100.00	–	–
Blackstone,	10	4	40.00	6	60.00
Second inspection,	15	11	73.33	4	26.67
Third inspection,	13	13	100.00	–	–
Canton,	8	7	87.50	1	12.50
Second inspection,	2	2	100.00	–	–
Third inspection,	11	9	81.82	2	18.18
Fourth inspection,	4	2	50.00	2	50.00
Dover,	1	1	100.00	–	–
Franklin,	9	5	55.56	4	44.44
Second inspection,	6	5	83.33	1	16.67
Third inspection,	6	4	66.67	2	33.33
Holliston,	10	7	70.00	3	30.00
Second inspection,	4	3	75.00	1	25.00
Third inspection,	14	9	64.29	5	35.71
Fourth inspection,	3	2	66.67	1	33.33
Hopkinton,	17	13	76.47	4	23.53
Second inspection,	4	4	100.00	–	–
Third inspection,	24	15	62.50	9	37.50
Ipswich,	19	8	42.11	11	57.89
Second inspection,	1	1	100.00	–	–
Third inspection,	22	12	54.55	10	45.45
Medfield,	–	–	–	–	–
Second inspection,	21	11	52.38	10	47.62
Medway,	5	4	80.00	1	20.00
Third inspection,	11	10	90.91	1	9.09
Mendon,	22	14	63.64	8	36.36
Second inspection,	1	1	100.00	–	–
Third inspection,	7	7	100.00	–	–
Milford,	13	3	23.08	10	76.92
Second inspection,	8	3	37.50	5	62.50
Third inspection,	7	3	42.86	4	57.14
Millis,	5	5	100.00	–	–
Second inspection,	7	5	71.43	2	28.57
Third inspection,	14	13	92.86	1	7.14
Newton,	–	–	–	–	–
Second inspection,	1	1	100.00	–	–
Norfolk,	4	3	75.00	1	25.00
Second inspection,	6	5	83.33	1	16.67
Third inspection,	1	1	100.00	–	–
Sharon,	7	7	100.00	–	–
Second inspection,	2	2	100.00	–	–
Third inspection,	6	5	83.33	1	16.67

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Sherborn,	22	18	81.82	4	18.18
Second inspection,	5	3	60.00	2	40.00
Third inspection,	19	14	73.68	5	26.32
Fourth inspection,	1	1	100.00	–	–
Stoughton,	15	5	33.33	10	66.67
Second inspection,	12	2	16.67	10	83.33
Third inspection,	9	1	11.11	8	88.89
Sunderland,	2	–	–	2	100.00
Second inspection,	17	9	52.94	8	47.06
Third inspection,	1	1	100.00	–	–
Upton,	1	1	100.00	–	–
Uxbridge,	9	7	77.78	2	22.22
Second inspection,	18	12	66.67	6	33.33
Third inspection,	19	18	94.78	1	5.26
Walpole,	8	4	50.00	4	50.00
Second inspection,	28	23	82.14	5	17.86
Third inspection,	2	2	100.00	–	–
Westhampton,	21	14	66.67	7	33.33
Westwood,	15	3	20.00	12	80.00
Second inspection,	3	–	–	3	100.00
Third inspection,	7	6	85.71	1	14.29
Wrentham,	4	1	25.00	3	75.00
Second inspection,	4	2	50.00	2	50.00
Third inspection,	3	2	66.67	1	33.33

Total number of dairies examined,	650
Number found to be free from objectionable conditions,	428
Number concerning which letters were sent,	222
Total number of conditions to which attention was called,	615
Percentage of dairies which passed inspection,	65.85

In addition to the above, 191 dairies were visited at which the sale of milk had been discontinued.

Included in the total number of dairies visited were 245 which had recently started in the milk-producing business and were inspected for the first time.

The names of the owners of the dairies found to be worthy of commendation follow: —

Ashland.

Class A.

Loring, Homer * †

Class B.

Bell, R. W.
Bradstreet, John
Eklund, Klaus A.
Gargan, Thomas
Haskell, N. H.
Kairit, Augustus *
Ogilvie, Alexander * †
Rockwood, A. U.
Rockwood, Estate of C. P.‡
Shephard, J. H.
Southmayd, Edward * †
Stone, H. D. & I. F.‡
"Town Farm" ‡
Whitney, Joel F.§ ||

* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

Bellingham.

Class B.

Aldrich, A. A.*
Brothers, Felix *
Brothers, Isaac * †
Brothers, Joseph * †
Bullard, O. L.‡
Chenette, Joseph H.*
Connolly, M. J.‡
Dawley, F. H.‡
Geurin, Herbert *
Jinjras, Joseph *
Kokolski, T.
O'Neil, Patrick *
Pickering, Henry W.*
René, Kaiser *
Scott, Edgar M.* †
Scott, S. E.* †
Staples, George *
Thayer, L. Francis ‡ ||
"Town Farm" ‡
Trask, A.
Webber, E. C.* †
White, Carroll ‡ †
White, Frank M.* †
Whiting, E. B.*

Blackstone.

Class B.

Bailey, Harry * †
Billings, John M.‡
Boisvert, Media * †
Boisvert, T. M.*
Brown, Richard R.‡
Chase, F. F.* †
Crane, Samuel V.* †
Dumais, Charles *
Eames, Eugene J.‡ ||
Eliasz, Toeifl
Fuller, O. F.‡ ||
Gaudet, Napoleon * †
Goff, Joseph B.*
Hagany, James ‡
Hood, Allison, F.*
Kelly, Seth * †
McLaughlin, (Mrs.) Ellen ‡ †
Niles, Flora A.
Riley, Thomas ‡
Scott, Malcolm ‡
Taft, Lewis A.
Thayer, Albert W.‡
Thayer, Ernest E.‡
Thayer, Wm. H.‡
Thomas, A. C.* †
Ticks, Thomas
Warfield Brothers ‡
Webster, Albert ‡ ||

Canton.

Class A.

Mayo, (Miss) A. L.‡

Class B.

Capen, (Dr.) Geo. F.*
Crocker, J. B.‡ ||
Cushman, Chas. F.*
Dalton, James §
Dean, John H.‡ ||
Draper, Estate of C. N.
Farrington, Ellis ‡
Farrington, John §
French, Charles H., Jr.‡ ||
Galligan, M. H.‡ ||
Gerald, Fred ‡ ||
Hunt, George M.
Hyams, D. N. C.
Porter, (Dr.) Isaac L.
Reynolds, Albert F.
Sumner, Frank
Taylor, James ‡
Tenney, H. W.
White, Elisha ‡

Dover.

Class B.

Pierce, Charles C.

Franklin.

Class A.

Ray, Joseph G.* †

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

Class B.

Boulanger, Edward * †
Daniels, Lucius W.‡
Davidson, J.
Higgins, Z. R.
Lefleur, Isaac
Morton, M.
Murray, Joseph P.*
Norfolk Woolen Mills ‡
Pond, W. A.
Ray James F.‡ †
Ribero, Frank * †
Sullivan, Frederick J.*
Ward, Henry S.‡ †

Holliston.

Class B.

Beanstock, Jacob ‡
Bullard, H. E.‡
Camus, Emil
Cutler, Henry E.‡ ||
Cutler, Mary E.‡ ||
Davern, James ‡
Dewing, J. H.‡
Eames, Willis E.
Faelton, W. C.§ ||
Fessenden, S. H.* †
Finn, F. K.
Gooch, A. H.§ ||
Grantham, C. T.
Hall, Charles W.‡
Howe, Henry S.
Mahoney, Cornelius *
Marchant, W. E.‡
Perry, Henry
Seigel, Morris
Smith, L. E. P.* †

Hopkinton.

Class A.

Baldwin, F. F.‡ ||
Leman, J. Howard

Class B.

Baker, D. I.
Ball, Charles ‡
Bruce, E. M.‡
Burnett, John
Claflin, A. E.‡
Cooney, Patrick A.‡
Creeden, D. J.‡
Cunningham, A.‡
Dewey, F. E.‡
Gamash, Wallace W.
Higgens, John
Houston, Clarence E.‡
Keyes, Arthur
Larsen, Peter ‡
Macbeth, Walter C.‡
Mann, J. A.‡
McDermott, (Mrs.) P.
McLeod, P. H.
Moore, (Mrs.) J. B.
Phipps, A.‡
Plunkett, (Dr.) John L.
Prikacki, Frank
Proctor, Albert E.*
Roach, T. J.‡
Robert, Napoleon
Siegener, F. K.
Smith, E. R., Jr.‡
Spofford, G. R.* †
Thayer, Irving W.* †
Thompson, W. V.*

Ipswich.

Class B.

Appleton, F. R.‡ ||
Appleton, James W.
Brown, Charles G.‡ †
Brown, E. Newton ‡
Brown, Storey ‡
Cross, Fred G.‡
Day, Charles G.*
Donlon, Patrick
Elwell, Albert ‡
Goodhue, William ‡
Harris, William
Hodgdon, George A.‡
"House of Correction" ‡ ||
Jewett, Charles ‡
Lord, Thomas ‡
Morris, John R.
Perley, Osborn P.
Rutherford, A. H.
Searle, Charles P.
Spyut, Albin
"Town Farm" ‡ ||

Medfield.

Class B.

Allen, Joseph E.*
Bartlett, J. C.* †
Bridge, C. D.*
Hammond, Estate of F. D.*
Hutson, Herbert W.*
Jewell, Edward J.*
Koch, Ernest *
Rafter, Alexander * †
Stubbs, Frank A.*
Wilkins, Frank W.* †
Woods, H. W.* †

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

MEDWAY.

Class B.

Blake, E. H.‡
Cassidy, Frank
Connelly, Patrick ‡
Fowler, A. M.‡
Gordon, A.
Maitland, A.‡
Orenstein, J.‡
Sanderson, J. G.
Sherry, James ‡
Smyth, James ‡
Tracey, T.‡
Westkage, Charles ‡
Wight, G. A. ‡
Wilson, C. A.

MENDON.

Class B.

Beals, R. G.
Burns, John ‡
Canon, A. I.
Collins, Lucian
Curley, Charles
Darling, Geo. H.‡ †
Davenport, F. A. & O. P.
Estey, John W.‡ ||
Goss, C. B.
Irons, Wm.
McTurk, Thomas * †
Northrop, Joseph
Parkinson, G. A.‡ ||
Pond, A. V. G.
Seabury, (Miss) C. R.
Taft, Clarence A.
Taft, Edward H.‡
Taft, Geo. L.‡
Taft, Geo. M.‡
Taft, Leonard E.
TenCelle, Alphe
Wood, Frank H.

MILFORD.

Class A.

Day, Frank A.* †
Draper, E. S.‡

Class B.

Anderson, Carl * †
Austin, Herbert
Baganar, P.
Kimball, Charles H.*
Perry, Jennie J.‡
"Town Farm" ‡ ||
Trask, H. E.

MILLIS.

Class B.

Adams, Moses ‡
Baker, Morris
Brown, Antonio ‡
Brown, J. C.
Brushok, Otto ‡
Cassidy, T. H.* †
Chamberlain, L. W.‡
Clark, Stanley ‡
Devilinsky, S.‡
Dineen, D.*
Finklestein, Max ‡
Futtoransky, Joseph
Horan, Thomas J.‡
Keefe, Patrick ‡
McCarthy, T. J.
Movius, H. L.
Murphy, Dennis *
Post, B. F.‡
Richardson, C. F.‡
Richardson, E. L.* †
Rotman, H.* †
Slayton, J. C. F.‡
Thorn Brothers ‡

NEWTON.

Class AA.

Smith, D. F.* †

---

* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
|| Reported favorably on all previous inspections.

Norfolk.

Class AA.

"The Warelands" * † ¶

Class A.

Cook, T. D.‡ ||

Class B.

Baptist, E.
Borg, J. O.
Evans, J. H.* †
Jones, Andrew * †
McClintock, Levi * †
Norfolk Woolen Co.* †
Wyllie, W. J.

Sharon.

Class AA.

Whipple, Amos H.* †

Class A.

Prince, F. A.
"Town Farm"

Class B.

Fuller, E. J. ‡
Geissler, Jacob J.* †
Goddard, Estate of Joseph ‡ ||
Griffin, (Dr.) W. A.
Kuestenmacher, F. J.
Leary, Louis ‡ †
Leary, George ‡ ||
McManus, James H.
Moody, Frank
Morse, Robert G.‡
Rafter, J. J.

Sherborn.

Class A.

Brown, (Rev.) H. N.‡ †
Dwight, (Dr.) E. W.
Gould, L. F.* †
Merriam, John M.‡ ||

Class B.

Adams, A. H.‡
Bean, C. A.‡ ||
Bothfeld, Theodore ‡
Brown, John F.‡
Bullard, A. W.
Campbell, Milo F.
Carter, George P.
Channing, (Dr.) Walter ‡ †
Clough, W. H.* †
Daniels, Daniel W.
Farricy, James
Fitts, George S.* †
Gavin, T.
Grout, F.‡ †
Hildreth, I. C.‡ †
Hodge, W. H., Jr.§ ||
Holbrook, G. P.
Howe, O. H.
Johnson, E.
Leach, L. Walter
Leland, J. F.‡
Mann, G. L.
Marriner, C. A.‡ †
Nelson, Martin
Peckham, N. H.
Richards, D. J.
Saunders, N. W.
Shillaber, (Mrs.) C. P.
Stinson, A. H.
Sylvester, Frank A.‡
Whitney, Daniel L.‡
Wright, W. R.‡

* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.
¶ Certified milk.

STOUGHTON.

Class B.

Connors, (Mrs.) Celia
Hammond, H. A.
Hooper, William
Hutchins, E. B.* †
Kimball, W. A.* †
McNamara, J. F.‡ ||
Reynolds, F. W.
Thaxter, F. O.

SUNDERLAND.

Class A.

Smith, George P.‡ ||
Warner, Chester * †
Warner, L. C.* †

Class B.

Bixby Brothers *
Gribko, Frank *
Gunn, C. I.*
Leach, John *
Pomeroy, Charles H.* †
Whitmore, F. L.*
Williams, F. O.*

UPTON.

Class B.

Fiske, W. B.

UXBRIDGE.

Class B.

Agopian, Kirko * †
Albee, E. E.
Alexander, James H.*
Baker, A. S.*
Barr, Irving * †
Casavant, A.‡ ||
Chase, Elmer E.‡
Cnossen, John
Crocker, Charles E.‡
Daley, Michael ‡
Davis, Charles B.*
Ellison, Henry M.‡
Ellison, Walter H.‡
Fagen, Thomas
Gasser, John
Goldthwait, Milton L.*
Hall, Arthur S.‡
Hamilton, Frank J.‡ ||
Holbrook, Willard
Hollis, John E.‡ ||
Jacobs, Harrison
Johnson, Lars ‡
McGuire, Martin ‡
O'Brien, Daniel E.*
O'Brien, M. J.
Richardson, Bernard * †
Richardson, Samuel
Scott, S. F.‡ †
Seagrave, August C.‡ ||
Seagrave, Fred A.‡ †
Taft, George S.‡ ||
Turner, Frank ‡
Uxbridge Cotton Mills ‡ ||
Vanderscluice, Bowker *
Vanderzight, Auke * †
Wassener, Bert *
Wiegersma, Ringer F.‡

WALPOLE.

Class B.

Bock Brothers ‡ ||
Boyden, Almond F.*
Bradford, C. H.
Burns, (Mrs.) P.
Cobb, Edwin T.* †
Cutler, Charles F.
Douglass, Fred
Everett, Edmund * †
Fisher, Lyman * †
Foster, F. W.* †
Cochrane, J.*
Haley, David *
Hartshorn Brothers *
Hauberg, Isidor *
Hilderbrant, Henry * †
Miller, Fred W.*
Mingel, Edward T.*
Morse, Warren * †
Plimpton, George * †
Reed, Francis L.*
Richards, Charles P.* †
Sexton, Michael * †
Shepard, Edward L.‡ ||
Sherer, David * †
Shurfelt, C. P.* †
Tisdale, Percy * †
Wheeler, Wm. J. W.* †
Whiting, Harry * †
Yonker, K. A.*

* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
|| Reported favorably on all previous inspections.

Westhampton.

Class B.

Bartlett, Clayton A.
Blakeslee, Frank
Bridgman, E. B.
Burt, Levi
Clapp, E. B.
Clapp, L. W.
Edwards, Arthur T.
Graves, George W.
Howard, Frank
Montague, A. D.
Payson Brothers
Phelps, Strong A.
Rust, Stephen
Shaw, I. O.

Westwood.

Class A.

Crane, Joshua, Jr.‡ ||

Class B.

Codman, E. D.
Colburn, W. P.‡
Crane, Charles S.‡ †
Forbes, W. Cameron ‡ ||
Lockwood, T. S.
McLeod, William A.‡ ||
Rice, A. W.‡ ||
Rice, George T.

Wrentham.

Class B.

Almy, F. S.
Eldridge, C. L.‡
McEwen, James W.‡
Randall, Fred * †
Whipple, Arthur M.* †

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
|| Reported favorably on all previous inspections.

TRANSMISSION EXPERIMENTS WITH THE VIRUS OF POLIOMYELITIS: FINDING THE VIRUS IN THE NASAL SECRETION OF A HUMAN CARRIER FOUR MONTHS AFTER THE ACUTE STAGE OF A SECOND ATTACK OF POLIOMYELITIS.[1]

By William P. Lucas, M.D., and Robert B. Osgood, M.D., Boston.

Since our note on the finding of the virus of anterior poliomyelitis in the tonsils of recovered monkeys,[2] we have been carrying on similar experimentation with human tonsillar and nasopharyngeal tissue as we were able to obtain them from time to time. Our results in this we presented to the Boston Society of Medical Sciences late in 1911. Our conclusions were that the results of these experimental studies with the filtrates of human nasopharyngeal tissues, removed at varying periods after the acute attack, may be said to be suggestive but not conclusive for the following reasons: —

In three monkeys injected with three different tonsillar extracts, no clinical signs of poliomyelitis followed the inoculations.

In two monkeys the clinical signs were typical, but we were unable to pass the infection on to a second series of monkeys in a perfectly conclusive manner, nor were the pathological findings absolutely typical though suggestive, although there were much the same findings as those described by Kling, Petterson and Wernstedt [3] in their investigations as to the duration of the virus in the human body.

We felt convinced that the nasopharyngeal tissue of recovered human cases was able to hold the virus for at least six months; but owing to the far-reaching importance of such a fact, we withheld the data from print. Since, then, however, these facts have been proved conclusively by Kling, Petterson and Wernstedt, and by Flexner. Further, not only have these investigations proved the presence of the virus in the washings from the nasopharynx of patients in the acute stage of the disease, but also, which is still more significant, the virus has been found in washings from the nasopharynx of parents, attendants and friends; and, further, Kling, Petterson and Wernstedt have found the virus present in nasopharyngeal

[1] From the Laboratory of Surgical Research, Harvard Medical School. Experiments carried out by means of a grant from the Massachusetts State Board of Health. Reprinted from the Journal of the American Medical Association, May 24, 1913.

[2] Osgood and Lucas: "Transmission Experiments with the Virus of Poliomyelitis," The Journal of the American Medical Association, Feb. 18, 1911, p. 495.

[3] Kling, Petterson and Wernstedt: "Investigations on Infantile Paralysis," Report from the State Medical Institute of Sweden to the Fifteenth International Congress on Hygiene and Demography, Washington, 1912.

swallowings and washings as late as 204 days (seven months) after the infection.

The case we wish to report falls into this latter class of carriers, but the probable duration of the carrier was two years and three months.

R. H. (patient of H. G. Rockwell, Amherst, Mass.), aged five, had his attack of paralysis in February, 1910. He was first seen by one of us (R. B. O.) on Feb. 19, 1912. At that time he showed a residual paralysis of the dorsal flexors of both feet and of the peroneal group of the right. He improved till September, 1912, when, after an attack of apparent bronchitis and coryza, he became suddenly weak in the right arm, with increased weakness of the affected legs as well. This was associated with fever, and the mother considered it to be a second attack of paralysis. The boy gradually recovered. Within two weeks after this apparent exacerbation, his young sister, aged ten, had high fever, and one of her arms became completely paralyzed, with weakness of the legs. When the boy was seen on Nov. 8, 1912, six weeks after his recovery from the second attack, he was almost back in muscular strength to where he had been before, without any remaining paralysis of his arm. He still had a certain amount of nasal secretion. Through the efforts of his parents we were able to obtain 10 cubic centimeters of clear mucoid nasal secretion on November 11. With this material passed through a Berkefeld filter we inoculated two monkeys on November 15, with negative results. Again, on Jan. 3, 1913, we received some nasal secretion, and inoculated two monkeys with negative results.

We repeated this again, on January 22, injecting 10 cubic centimeters of the filtrate intracerebrally into monkey No. 157. This monkey became paralyzed on February 2 and died on February 5. He developed complete paralysis of all four extremities. The pathological picture of his cord (Dr. H. C. Low) was not typical but very suggestive.

On January 31 we again repeated the injection of filtrate from a fresh specimen of nasal secretion, inoculating two monkeys, Nos. 159 and 160. No. 159 received 5 cubic centimeters of the filtrate intracerebrally and 10 cubic centimeters intraperitoneally. He became paralyzed on February 5, and died, completely paralyzed, on February 8.

Cord and medulla pathologically (Dr. H. C. Low) were typical of anterior poliomyelitis (see appended report), and on April 9 we injected two monkeys, one with the cord emulsion of monkey No. 157, and the second with the cord of monkey No. 159. This last monkey No. 161, received 8 cubic centimeters of a cord emulsion from monkey No. 159. He became paralyzed on April 26, and died on April 27, with typical complete paralysis. The pathological findings (see appended report, Dr. H. C. Low) were typical of anterior poliomyelitis. This case seems

to us of special interest: first, as demonstrating the long period during which the virus was undoubtedly harbored in the nasopharynx; secondly, a human infection (his sister) occurring two years after his primary attack during what seemed like an exacerbation of his former attack; thirdly, the recovery of the virus from his nasal secretions four months after his second attack and two years and three months after his first attack; and fourthly, the successful inoculations were done with filtrates from straight nasal secretions, not from washings.

Pathological Report by Dr. H. C. Low.

Monkey No. 159. — Sections of the cord in the lumbar and cervical regions show moderate injection of the blood-vessels and some small round-cell infiltration about them. Changes are not marked but are consistent with the diagnosis of poliomyelitis.

Monkey No. 161. — Sections of the lumbar, dorsal and cervical regions show marked round-cell infiltration about the blood-vessels and in the perivascular spaces, more evident near the central canal and the anterior horns. Changes are typical of poliomyelitis.

COLD STORAGE EGGS MUST BE MARKED.

Acts of 1913, Chapter 538.

An Act relative to the sale of eggs taken from cold storage.

Be it enacted, etc., as follows:

Section 1. Whenever eggs that have been in cold storage are sold at retail, or offered or exposed for sale, the basket, box or other container in which the eggs are placed shall be marked plainly and conspicuously with the words "cold storage eggs", or there shall be attached to such container a placard or sign having on it the said words. If eggs that have been in cold storage are sold at retail or offered or exposed for sale without a container, or placed upon a counter or elsewhere, a sign or placard, having the words "cold storage eggs" plainly and conspicuously marked upon it, shall be displayed in, upon or immediately above the said eggs; the intent of this act being that cold storage eggs sold at retail or offered or exposed for sale shall be designated in such a manner that the purchaser will know that they are cold storage eggs. The display of the words "cold storage eggs", as required by this act, shall be done in such a manner as is approved by the state board of health.

Section 2. Violation of any provision of this act shall be punished by a fine of not less than ten dollars nor more than five hundred dollars for each offence. [*Approved April 25, 1913.*

At a meeting of the State Board of Health, held June 5, 1913, it was voted that —

The sign or placard required by section 1 of chapter 538 of the Acts of 1913 to be placed upon or immediately above cold storage eggs, or upon the basket, box or other container in which cold storage eggs are placed, shall consist of the words "Cold Storage Eggs," printed in uncondensed Gothic type, in letters not less than two inches in height, printed in black on a white background, no other lettering to appear on or to be attached to said sign or placard.

NEW LEGISLATION.

ACTS OF 1913, CHAPTER 722.

AN ACT TO PROHIBIT THE MANUFACTURE, SALE AND USE OF GOLF BALLS CONTAINING EXPLOSIVES.

Be it enacted, etc., as follows:

SECTION 1. It shall be unlawful to manufacture or sell or knowingly to use in this commonwealth, or to have in possession for the purpose of sale, any golf ball containing any acid, fluid, gas or other substance tending to cause the ball to explode and to inflict bodily injury.

SECTION 2. Whoever violates any provision of this act shall be punished by a fine not exceeding five hundred dollars for a first offence, and for any subsequent offence by a fine not exceeding one thousand dollars, or by imprisonment for a term not exceeding one year, or by both such fine and imprisonment. [*Approved May 28, 1913.*

RECOMMENDATIONS FOR THE CONTROL OF THE STABLE FLY (*Stomoxys. Calcitrans*).

By CHARLES T. BRUES, INSTRUCTOR IN ECONOMIC ENTOMOLOGY, HARVARD UNIVERSITY.

BREEDING PLACES.

The larvæ breed mainly in two places. In the country they mature in large numbers in cow-droppings and in the manure from cow stables and pigsties. The manure from these places should, if possible, be treated in some way to destroy any contained larvæ once every ten days. It may be buried in well-drained soil, and before covering with earth wetted down with the following mixture applied by means of a sprinkling can: water, 5 gallons; arsenate of lead, 1 pound; phinotas oil, 1 quart.

This must be kept well mixed during application, and the manure must be sufficiently covered with soil to prevent danger to chickens which might be poisoned by feeding on these materials added to the manure. Garbage should be treated in the same way if not destroyed by feeding to swine or otherwise. Owing to their scattered distribution, cow-droppings in pastures are not readily treated, but they may be spread out while fresh by means of a stiff wire broom, to make them dry out more readily.

The larvæ occur also in numbers in fermenting grass, straw and similar substances, and unless thoroughly dried these should either be treated as described above or burned. The latter is usually far more convenient and satisfactory.

In cities and towns, lawn cuttings and other vegetable matter liable to undergo fermentation and decay should be removed regularly with household garbage, to be disposed of by the municipal authorities. The ease with which the larvæ will develop in heaps of decaying or fermenting grass make it extremely probable that a quite considerable portion of the flies seen in cities and closely populated towns come from this source.

Control of Adult Flies.

Whenever possible, stables where any sort of domestic animals are housed should be provided with some kind of large flytrap, like the one described below, which can be attached to one or more windows whose position is convenient for this purpose. A very large number of the adult flies may be caught and destroyed in this way.

Experience shows that the stable fly does not breed extensively in horse manure, although a very large proportion of our house flies come from this source, so that this substance cannot be regarded as a great source of stable flies. However, the adult flies feed regularly upon stabled horses and cows, and may be trapped in large numbers by means of inexpensive screen traps attached to one or more well-lighted windows of barns.

These traps are the invention of Prof. C. F. Hodge of Clark University, and may be briefly described as follows: —

The bottom consists of a board 2 or 3 feet long (most conveniently equaling in length the width of the window frame to which it is to be attached), and about 12 inches in width. The ends of the trap are of the same width and 3 or 4 feet high, according to the height of the window frame. The top is covered with ordinary screen window wire, as are also the sides, but on both sides the screen is folded inwards to form a sort of pleat, P, as shown in the diagram. On each side there is one pleat about 8 inches from the top and another not far below the middle of the trap.

Stable flies attracted to the stable window by the odors from within attempt to pass through the screen-covered outer side of the trap; not able to do this they wander upward to the fold at the inside-upper edge of the pleat. Along this edge the screen is pierced by a number of small holes (some of which are indicated in the photograph by the black dots) about 2 inches apart, made by means of an ice pick or other similar pointed instrument. The flies soon find their way through these and are then imprisoned in the interior of the trap. The inner surface of the trap next the window is made in a similar way, so that flies which have entered the barn through other windows, doors, etc., are caught on attempting to leave the barn through the trap window. It has been observed that most flies attempt to enter the barn in the evening, while the majority are passing outward in the early morning.

It is advisable to attach the trap to a south window, or at least to one on the sunniest side of the barn, as the flies are more abundant and active at such places. Other windows are best closed by hanging pieces of gunny sack over them, in order that the flies may be more abundantly attracted to the trap-window.

A Modification of the Above Trap.

To make the window trap more attractive to house flies (not stable flies) the bottom may be modified in such a way as to allow of its being baited with pans of sour milk, garbage, etc.

For this purpose the screen is cut short at the bottom, so that it does not quite reach the lower edge, leaving a narrow space one-half inch wide between it and the bottom board. An inside frame, like that shown in Fig. 4, is made of wood and covered with screen wire except on the bottom. In order to make this frame removable, the lower part of one side of the outer trap is made detachable, held in place by a few nails or screws (Fig. 3). By removing this, the inner frame may be slid in or out and the bait placed on the bottom board of the trap. House flies attracted to the bait enter the space below the screen of the inner frame, and having fed on the bait fly up to escape; they are allowed to enter the large upper cavity by a series of small holes (shown in the photograph by black dots) made through the upper ridge of the screen on the inner frame, and are thus imprisoned in the space with the stable flies that have entered through the similar holes in the pleats on the sides of the trap.

This modification entails extra carpentry for its construction, but after an examination of the accompanying figures, little ingenuity is required to produce a serviceable trap.

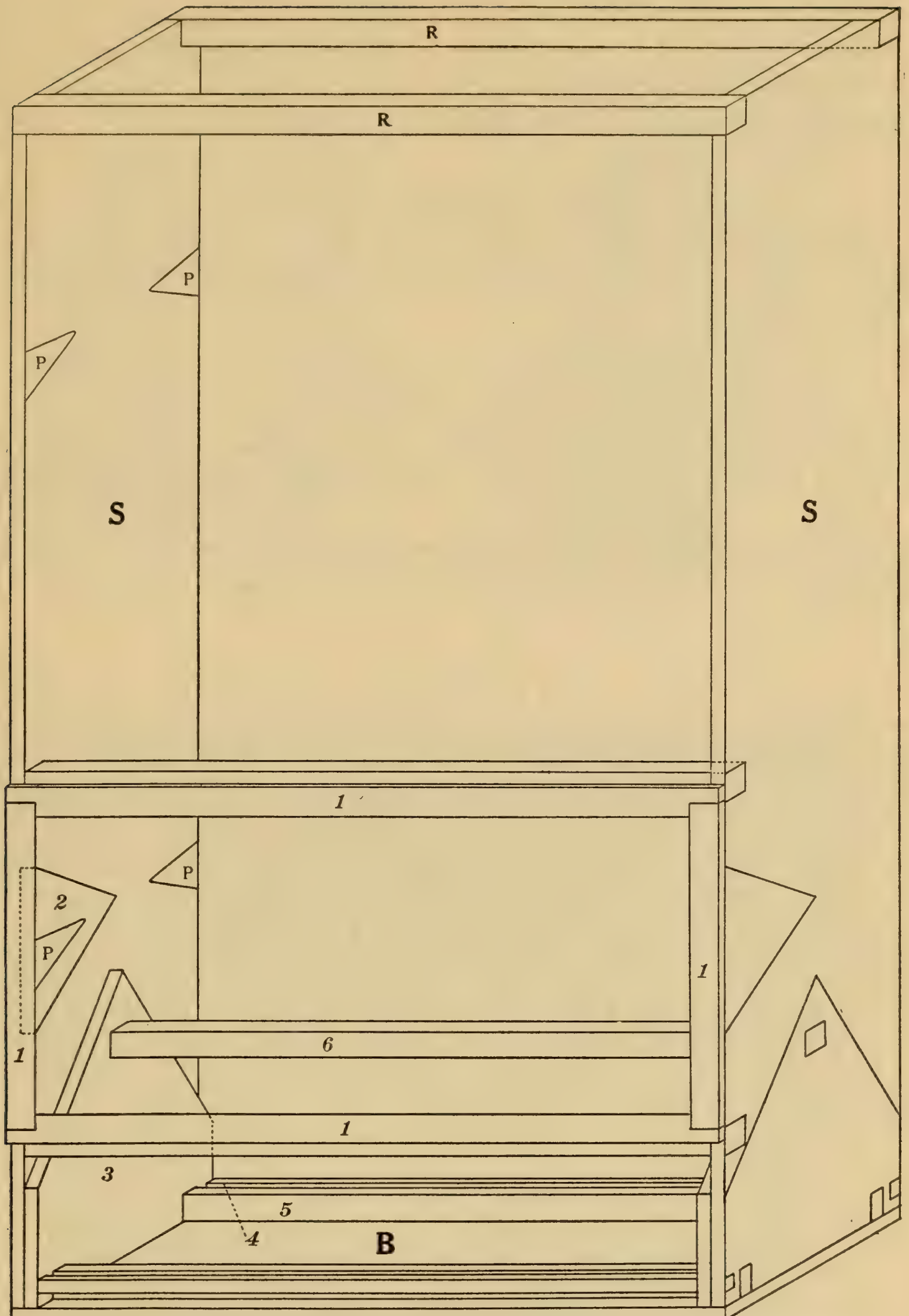

FIG. 1.—Diagram showing side and end view of Hodge window-trap for stable flies.

The first trap described is, of course, extremely simple, and can be quickly put together with few tools and at very small expense.

Baits do not add to the efficiency of the trap in catching stable flies as these are not attracted except by living animals, but they are very attractive to house flies, blow flies, "green-bottle" flies, etc.

Material required for Trap.

The material required for the simpler form of window trap 3 feet high, 2 feet wide, and 12 inches thick is as follows, in addition to nails and tacks: —

2 boards 3 feet by 12 inches, ½ inch thick.
1 board 2 feet by 12 inches, ½ inch thick.
2 strips 2 feet long, 1 inch thick and 1 inch wide.
7 running feet ordinary wire window-screen netting, 24 inches wide.

For the modified trap, the additional wood required can readily be ascertained by an examination of the accompanying drawing (Fig. 1) and photographs (Figs. 2, 3, 4).

The screen covering is not shown in the drawing, and the end view of the removable part of the modified trap (compare Fig. 4) is drawn on the outer surface at the right to show its construction. P, P, position occupied by the folds or pleats in the screen wire; R, R, rods across top of trap; S, S, end boards of trap; B, bottom board of trap. *The additional parts of the modified trap* are indicated by numbers as follows: 1, 1, 1, 1, removable frame on side of trap, bearing the triangular board, 2, which rests against the side board of the removable inner frame; 3, side board of removable inner frame; 4, 5, strips between side boards, between which house flies enter to reach bait which is placed inside the removable inner frame; the outside strip (4) should be raised above the bottom (B), leaving a space on the outside for the entrance of the flies, while the inside strip (5) should be flush with the bottom; 6, rod to strengthen inner frame.

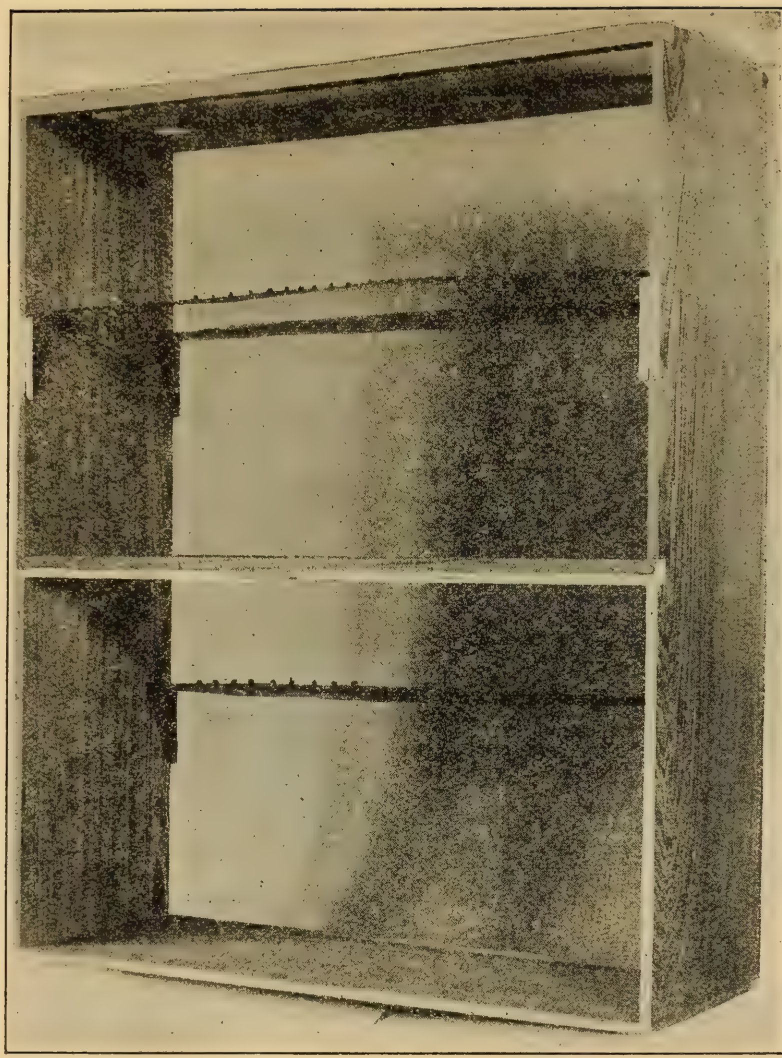

FIG. 2. — *Stomoxys* trap with modified trap and detachable side removed.

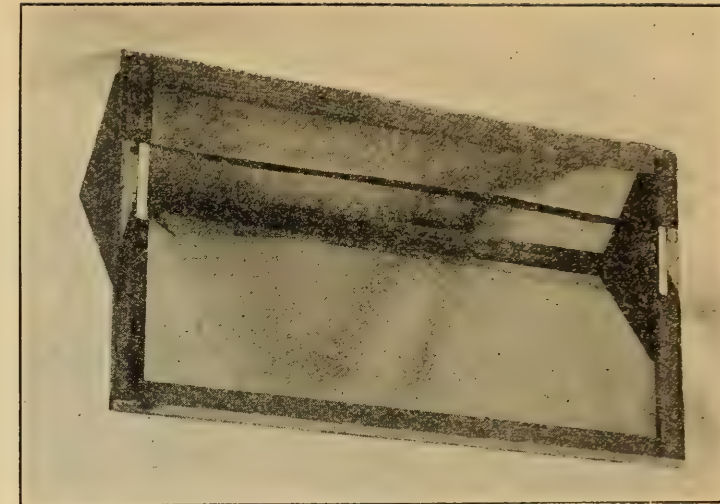

FIG. 3. — Detachable side of *Stomoxys* trap.

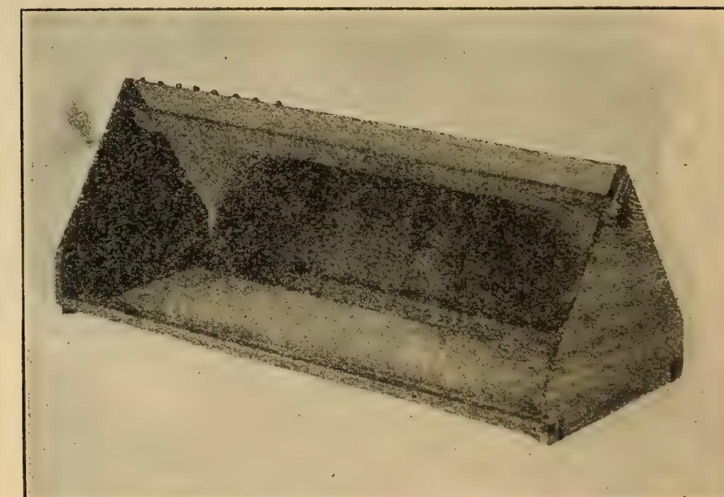

FIG. 4.—Modified trap for house flies.

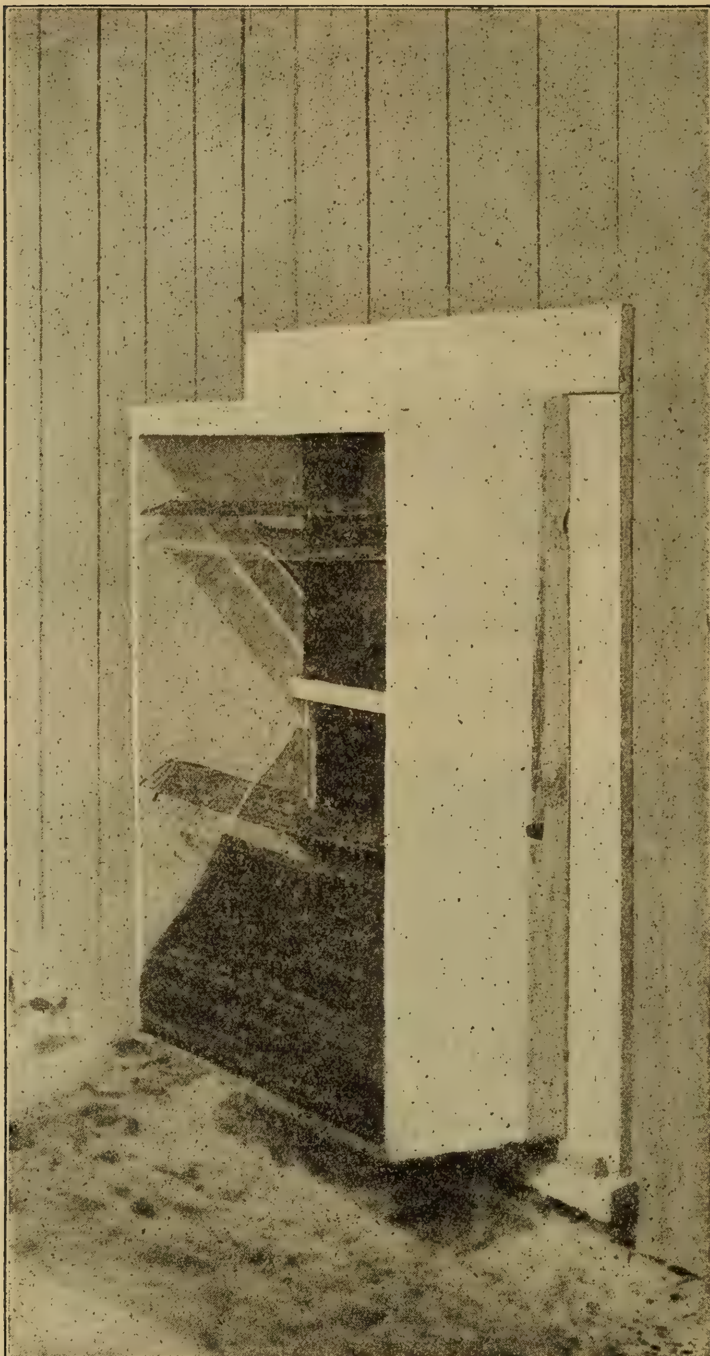

FIG. 5.—The combined traps in position.

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OF

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1913.

TABLE OF CONTENTS.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

RETURNS OF DISEASES.

Cases of Diseases declared by the State Board of Health to be Dangerous to the Public Health.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending —				
	June 7.	June 14.	June 21.	June 28.	Total.
Diphtheria,	144	121	115	95	475
Measles,	889	765	646	524	2,824
Scarlet fever,	153	140	115	91	499
Typhoid fever,	21	25	31	20	97
Tuberculosis, pulmonary (or not classified),	160	170	179	146	655
Tuberculous meningitis,	3	5	7	6	21
Tuberculosis, other than pulmonary,	17	6	11	11	45
Cerebro-spinal meningitis,	4	3	4	2	13
Whooping cough,	80	59	49	70	258
Varicella,	101	64	67	46	278
Ophthalmia neonatorum,	16	50	40	48	154
Anterior poliomyelitis,	–	–	1	–	1
Smallpox,	3	6	19	24	52
Trachoma,	7	6	–	2	15
Actinomycosis,	–	1	–	–	1
Tetanus,	–	1	–	2	3

Cases of Infectious Diseases not included in the Above Table.

[Cases not notifiable under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending —				
	June 7.	June 14.	June 21.	June 28.	Total.
Mumps,	1	5	7	5	18
Septic infection of throat,	–	1	–	–	1
Tonsilitis,	21	6	3	3	33
Keratitis,	–	–	–	1	1

RETURNS OF DEATHS.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Cities and Towns of more than 10,000 Population.

[Under the provisions of chapter 210, Acts of 1913.]

Week ending June 7, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, other forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston, ...	686,092	{ 36[1] { 43[2]	28[1] 32[2]	2[1] 2[2]	– 1[2]	3[1] 4[2]	– –	– –	1[1] 2[2]	– –	2[1] 2[2]
Worcester, ...	145,986	3	2	–	–	–	–	–	1	–	–
Fall River, ...	119,295	13	4	–	–	1	1	1	6	–	–
Lowell, ...	106,294	2	1	–	–	1	–	–	–	–	–
Cambridge, ...	104,839	5	5	–	–	–	–	–	–	–	–
New Bedford, ...	96,652	7	5	1	–	1	–	–	–	–	–
Lynn, ...	89,336	1	1	–	–	–	–	–	–	–	–
Springfield, ...	88,926	–	–	–	–	–	–	–	–	–	–
Lawrence, ...	85,892	4	3	1	–	–	–	–	–	–	–
Somerville, ...	77,236	1	–	–	–	–	–	1	–	–	–
Holyoke, ...	57,730	3	1	–	–	–	–	2	–	–	–
Brockton, ...	56,878	2	1	–	1	–	–	–	–	–	–
Malden, ...	44,404	3	1	1	–	1	–	–	–	–	–
Haverhill, ...	44,115	–	–	–	–	–	–	–	–	–	–
Salem, ...	43,697	4	2	–	1	–	1	–	–	–	–
Newton, ...	39,806	1	–	–	–	–	–	1	–	–	–
Fitchburg, ...	37,826	1	1	–	–	–	–	–	–	–	–
Taunton, ...	34,259	4	3	1	–	–	–	–	–	–	–
Everett, ...	33,484	–	–	–	–	–	–	–	–	–	–
Quincy, ...	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea, ...	32,452	2	2	–	–	–	–	–	–	–	–
Pittsfield, ...	32,121	3	2	–	–	–	–	1	–	–	–
Waltham, ...	27,834	–	–	–	–	–	–	–	–	–	–
Brookline, ...	27,792	1	–	–	–	1	–	–	–	–	–
Chicopee, ...	25,401	1	1	–	–	–	–	–	–	–	–
Gloucester, ...	24,398	–	–	–	–	–	–	–	–	–	–
Medford, ...	23,150	1	1	–	–	–	–	–	–	–	–
North Adams, ...	22,019	–	–	–	–	–	–	–	–	–	–
Northampton, ...	19,431	–	–	–	–	–	–	–	–	–	–
Beverly, ...	18,650	–	–	–	–	–	–	–	–	–	–
Revere, ...	18,219	–	–	–	–	–	–	–	–	–	–
Leominster, ...	17,580	1	1	–	–	–	–	–	–	–	–
Attleborough, ...	16,215	–	–	–	–	–	–	–	–	–	–
Westfield, ...	16,044	1	1	–	–	–	–	–	–	–	–
Peabody, ...	15,721	1	–	–	–	–	–	–	–	–	1
Melrose, ...	15,715	–	–	–	–	–	–	–	–	–	–
Woburn, ...	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport, ...	14,949	–	–	–	–	–	–	–	–	–	–
Gardner, ...	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough, ...	14,579	–	–	–	–	–	–	–	–	–	–
Clinton, ...	13,075	–	–	–	–	–	–	–	–	–	–
Milford, ...	13,055	–	–	–	–	–	–	–	–	–	–
Adams, ...	13,026	–	–	–	–	–	–	–	–	–	–
Framingham, ...	12,948	1	1	–	–	–	–	–	–	–	–
Weymouth, ...	12,895	–	–	–	–	–	–	–	–	–	–
Watertown, ...	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge, ...	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth, ...	12,141	–	–	–	–	–	–	–	–	–	–
Webster, ...	11,509	1	–	–	–	1	–	–	–	–	–
Methuen, ...	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield, ...	11,404	–	–	–	–	–	–	–	–	–	–
Arlington, ...	11,187	1	1	–	–	–	–	–	–	–	–
Greenfield, ...	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop, ...	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns, . .	2,052,127	111	72	6	3	10	2	6	9	–	3

[1] Nonresidents deducted. [2] Total deaths.

Week ending June 14, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, other forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	28[1] 34[2]	15[1] 16[2]	2[1] 5[2]	4[1] 4[2]	3[1] 4[2]	1[1] 1[2]	1[1] 2[2]	1[1] 1[2]	– –	1[1] 1[2]
Worcester,	145,986	9[3]	2	–	1	1	1	–	1	1	1
Fall River,	119,295	12	6	1	–	1	–	–	4	–	–
Lowell,	106,294	1	–	–	1	–	–	–	–	–	–
Cambridge,	104,839	4	1	1	–	–	–	–	1	–	1
New Bedford,	96,652	7	4	–	2	–	1	–	–	–	–
Lynn,	89,336	1	1	–	–	–	–	–	–	–	–
Springfield,	88,926	4	2	–	–	2	–	–	–	–	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	1	1	–	–	–	–	–	–	–	–
Holyoke,	57,730	2	2	–	–	–	–	–	–	–	–
Brockton,	56,878	2	1	–	1	–	–	–	–	–	–
Malden,	44,404	3	3	–	–	–	–	–	–	–	–
Haverhill,	44,115	–	–	–	–	–	–	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	2	1	–	–	1	–	–	–	–	–
Taunton,	34,259	3	3	–	–	–	–	–	–	–	–
Everett,	33,484	2[4]	1	–	–	–	–	–	1[4]	1[4]	–
Quincy,	32,642	3	2	1	–	–	–	–	–	–	–
Chelsea,	32,452	2	1	–	–	–	–	–	–	1	–
Pittsfield,	32,121	3	2	1	–	–	–	–	–	–	–
Waltham,	27,834	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	–	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	1	1	–	–	–	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	1	1	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	2	–	–	–	–	–	2	–	–	–
Westfield,	16,044	3	3	–	–	–	–	–	–	–	–
Peabody,	15,721	1	–	–	–	–	–	–	–	–	1
Melrose,	15,715	1	–	–	–	–	1	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	1	1	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	1	–	–	–	–	–	–	–	–	1
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	2	1	–	1	–	–	–	–	–	–
Winthrop,	10,132	1	–	–	–	1	–	–	–	–	–
Total of reporting towns,	2,027,822	109	56	9	10	10	4	4	8	3	5

[1] Nonresidents deducted.
[2] Total deaths.
[3] Including one death from tetanus.
[4] One death from measles and whooping cough combined.

Week ending June 21, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, other forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	33[1] 39[2]	18[1] 20[2]	3[1] 3[2]	2[1] 4[2]	5[1] 6[2]	1[1] 1[2]	1[1] 2[2]	1[1] 1[2]	2[1] 2[2]	– –
Worcester,	145,986	5	2	–	–	3	–	–	–	–	–
Fall River,	119,295	8	4	–	1	–	–	–	3	–	–
Lowell,	106,294	4	2	–	–	2	–	–	–	–	–
Cambridge,	104,839	7	4	–	–	1	1	–	1	–	–
New Bedford,	96,652	1	1	–	–	–	–	–	–	–	–
Lynn,	89,336	2	1	–	1	–	–	–	–	–	–
Springfield,	88,926	1	–	1	–	–	–	–	–	–	–
Lawrence,	85,892	5	4	–	–	–	1	–	–	–	–
Somerville,	77,236	3	1	1	–	1	–	–	–	–	–
Holyoke,	57,730	5	4	1	–	–	–	–	–	–	–
Brockton,	56,878	2	–	–	2	–	–	–	–	–	–
Malden,	44,404	1	1	–	–	–	–	–	–	–	–
Haverhill,	44,115	1	1	–	–	–	–	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	1	–	–	–	–	–	–	–	–	1
Taunton,	34,259	–	–	–	–	–	–	–	–	–	–
Everett,	33,484	1	–	–	–	–	–	–	–	1	–
Quincy,	32,642	1	1	–	–	–	–	–	–	–	–
Chelsea,	32,452	–	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	2	1	1	–	–	–	–	–	–	–
Waltham,	27,834	1	1	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	1	1	–	–	–	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	1	1	–	–	–	–	–	–	–	–
Northampton,	19,431	2	2	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	1	–	–	–	–	–	1	–	–	–
Westfield,	16,044	2	1	–	–	–	–	–	1	–	–
Peabody,	15,721	1	1	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	–	–	1	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	1	1	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	1	1	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,124,889	101	56	7	9	13	3	3	6	3	1

[1] Nonresidents deducted. [2] Total deaths.

Week ending June 28, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, other forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	27[1] 32[2,3]	12[1] 13[2]	5[1] 5[2]	2[1] 3[2]	4[1] 5[2]	– –	1[1] 2[2]	1[1] 1[2]	2[1] 2[2]	– –
Worcester,	145,986	3	–	1	–	–	–	1	1	–	–
Fall River,	119,295	8	4	2	–	–	–	–	2	–	–
Lowell,	106,294	2	–	–	–	2	–	–	–	–	–
Cambridge,	104,839	3	3	–	–	–	–	–	–	–	–
New Bedford,	96,652	3	2	–	–	1	–	–	–	–	–
Lynn,	89,336	3	1	–	–	1	–	–	–	1	–
Springfield,	88,926	3	2	1	–	–	–	–	–	–	–
Lawrence,	85,892	5	3	2	–	–	–	–	–	–	–
Somerville,	77,236	3	2	1	–	–	–	–	–	–	–
Holyoke,	57,730	1	–	–	–	–	–	1	–	–	–
Brockton,	56,878	1	1	–	–	–	–	–	–	–	–
Malden,	44,404	1	–	–	–	1	–	–	–	–	–
Haverhill,	44,115	1	1	–	–	–	–	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	1	1	–	–	–	–	–	–	–	–
Taunton,	34,259	2	1	–	–	1	–	–	–	–	–
Everett,	33,484	1	–	–	1	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	1	1	–	–	–	–	–	–	–	–
Pittsfield,	32,121	1	1	–	–	–	–	–	–	–	–
Waltham,	27,834	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	1	–	–	–	–	1	–	–	–	–
Gloucester,	24,398	1	1	–	–	–	–	–	–	–	–
Medford,	23,150	1	1	–	–	–	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	2	1	1	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	2	2	–	–	–	–	–	–	–	–
Peabody,	15,721	1	1	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	1	1	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,109,698	84	43	13	4	11	1	4	4	3	–

[1] Nonresidents deducted. [2] Total deaths.
[3] Including one death from tetanus.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Towns of less than 10,000 Population.

[Under the provisions of chapter 210, Acts of 1913.]

DISEASE.	Place.	Week ending — June 7.	June 14.	June 21.	June 28.
Tuberculosis, pulmonary (or not classified),	Barnstable,	1	–	–	–
	Bridgewater,	–	3	–	–
	Dudley,	–	–	–	1
	Erving,	–	–	1	–
	Granby,	–	–	–	1
	Hudson,	–	–	–	2
	Lunenburg,	–	–	–	1
	Marshfield,	1	–	–	–
	Medfield,	–	1	–	1
	Milton,	1	–	–	–
	Montague,	–	–	–	1
	North Andover,	–	–	1	–
	Northfield,	–	–	–	1
	Palmer,	–	–	1	–
	Pelham,	–	1	–	–
	Randolph,	–	1	–	–
	Saugus,	1	–	–	–
	Somerset,	–	–	–	1
	Swampscott,	1	–	–	–
	Tisbury,	1	–	–	–
	Upton,	–	1	–	–
	Williamstown,	1	–	–	–
Total,		7	7	3	9
Tuberculous meningitis,	North Andover,	–	–	1	–
Tuberculosis, other than pulmonary,	Belmont,	–	–	–	1
	Bridgewater,	–	–	1	–
	Easthampton,	–	1	–	–
	Medfield,	–	–	1	–
	Millbury,	–	–	1	–
	Somerset,	–	–	–	1
	Wareham,	1	–	–	–
Total,		1	1	3	2
Diphtheria,	Belmont,	1	–	–	–
	Millbury,	–	–	1	–
Total,		1	–	1	–
Scarlet fever,	Palmer,	–	–	–	1
	Westport,	1	–	–	–
Total,		1	–	–	1

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Towns of less than 10,000 Population — *Concluded.*

DISEASE.	Place.	Week ending — June 7.	June 14.	June 21.	June 28.
Measles, . . .	Amesbury, . .	–	1	–	–
	Easthampton, .	–	1	–	–
	Palmer, . .	1	–	–	–
Total, . . .	. . . . .	1	2	–	–
Whooping cough, .	Stoneham, . .	1	–	–	–
Cerebro-spinal meningitis, ...	Northbridge, .	–	1	–	–
	Williamstown, .	1	–	–	–
Total, . . .	. . . . .	1	1	–	–
Tetanus, . . .	Great Barrington,	–	–	–	1

REPORT ON INSPECTION OF FOOD AND DRUGS.

Laboratory Examinations of Food and Drugs.

The following summary presents the results of the laboratory examinations during the month of June, 1913, of samples of food and drugs collected by inspectors of the Board: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Cider,	1	–	1	Maple sugar,	1	–	1
Cocoa,	3	–	3	Meat products: —			
Confectionery,	12	–	12	Hamburg steak,	1	–	1
Cream,	10	–	10	Pork chops,	2	–	2
Drugs,	163	24	187	Mince meat,	1	–	1
Eggs,	4	7	11	Sausages,	2	2	4
Flavoring extracts: —				Milk,	552	126	678
				Olive oil,	4	–	4
Lemon,	5	–	5	Pickles,	2	–	2
Vanilla,	3	–	3	Salad dressing,	1	–	1
Grape juice,	9	–	9	Table sauce,	1	–	1
Jams and jellies,	2	–	2	Vinegar,	5	1	6
Lard,	1	–	1				
Lime juice,	10	2	12	Total,	795	162	957

The samples of drugs found to be adulterated were alcohol, elixir of potassium bromide, spirit of anise, spirit of camphor, spirit of peppermint, tincture of iodine, tincture of vanilla.

The cities and towns in which samples were collected were: Adams, Amesbury, Ashby, Attleborough, Belmont, Boston, Braintree, Bridgewater, Brookfield, Brookline, Cambridge, Chelsea, Danvers, Dartmouth, Easton, Everett, Hanover, Haverhill, Hopkinton, Leicester, Lowell, Lynn, Malden, Maynard, Medford, New Bedford, Newburyport, Newton, North Adams, North Brookfield, Norwood, Quincy, Revere, Rockland, Rutland, Saugus, Stoughton, Wakefield, Waltham, Whitman, Williamstown, Worcester.

Prosecutions for Violations of the Law relating to Food and Drugs.

Two convictions were secured during the month of June, 1913, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Fred Breen, . . .	Boston, .	Obstruction of inspector.
2	Dennis Kelleher, . .	Newburyport,	Milk (total solids, 11.44).[1, 2]

[1] Skimmed. [2] Appealed.

Fines imposed, $75.

List of Adulterated or Improperly Labeled Foods, etc., for June, 1913.

The following shows the adulterated or improperly labeled foods during the month of June, 1913: —

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
20503	Lime juice, "Von Laer's,"	J. P. W. von Laer & Co., Boston, Mass., and West Indies,	Contained 50 per cent. of added water.
20549	Lime juice, Trophy Brand,	Delano, Potter & Co., Boston, Mass.,	Contained 63 per cent. of added water; labeled 49.9 per cent.
q 11649	Milk,	Roy E. Adams, Revere, Mass.,	Total solids, 10.7 per cent.; fat, 3.25 per cent.; contained added water.
q 11650	Milk,	Edward Flynn, Revere, Mass.,	Total solids, 10.8 per cent.; fat, 3.35 per cent.; contained added water.
3443-S	Milk,	Dennis Kelleher, Newburyport, Mass.,	Total solids, 11.44 per cent.; 2.2 per cent.; proteins, 3.57 per cent.; skimmed milk.
3445-S	Milk,	Dennis Kelleher, Newburyport, Mass.,	Total solids, 11.6 per cent.; fat, 2.8 per cent.; proteins, 3.3 per cent.; skimmed milk.
3447-S	Milk,	Dennis Kelleher, Newburyport, Mass.,	Total solids, 12.5 per cent.; fat, 3.2 per cent.; proteins, 3.7 per cent.; skimmed milk.
3449-S	Milk,	Dennis Kelleher, Newburyport, Mass.,	Total solids, 11.78 per cent.; fat, 3.1 per cent.; proteins, 3.42 per cent.; skimmed milk.

REPORT ON INSPECTION OF DAIRIES.

During the month of June, 1913, 493 dairies were examined in the following places: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Attleborough,	8	4	50.00	4	50.00
Second inspection,	5	2	40.00	3	60.00
Third inspection,	31	18	58.06	13	41.94
Barnstable,	7	5	71.43	2	28.57
Second inspection,	19	8	42.11	11	57.89
Third inspection,	4	3	75.00	1	25.00
Berkley,	4	3	75.00	1	25.00
Second inspection,	3	2	66.67	1	33.33
Third inspection,	9	6	66.67	3	33.33
Bourne,	6	2	33.33	4	66.67
Dighton,	11	8	72.73	3	27.27
Second inspection,	3	3	100.00	–	–
Third inspection,	3	3	100.00	–	–
Fourth inspection,	1	–	–	1	100.00
Douglas,	3	1	33.33	2	66.67
Second inspection,	3	3	100.00	–	–
Foxborough,	9	5	55.56	4	44.44
Second inspection,	5	1	20.00	4	80.00
Third inspection,	5	4	80.00	1	20.00
Groton,	7	4	57.14	3	42.86
Third inspection,	12	6	50.00	6	50.00
Hingham,	9	7	77.78	2	22.22
Second inspection,	7	6	85.71	1	14.29
Fourth inspection,	3	3	100.00	–	–
Holbrook,	3	3	100.00	–	–
Third inspection,	2	2	100.00	–	–
Hopedale,	2	2	100.00	–	–
Marion,	3	2	66.67	1	33.33
Third inspection,	2	2	100.00	–	–
Mattapoisett,	3	2	66.67	1	33.33
Second inspection,	15	4	26.67	11	73.33
Third inspection,	7	2	28.57	5	71.43
Newburyport,	9	4	44.44	5	55.56
Second inspection,	3	–	–	3	100.00
Third inspection,	10	4	40.00	6	60.00
North Attleborough,	7	3	42.86	4	57.14
Second inspection,	6	2	33.33	4	66.67
Third inspection,	15	11	73.33	4	26.67
Pepperell,	4	4	100.00	–	–
Second inspection,	3	3	100.00	–	–
Third inspection,	15	14	93.33	1	6.67
Plainville,	2	2	100.00	–	–
Second inspection,	3	2	66.67	1	33.33
Third inspection,	8	4	50.00	4	50.00
Quincy,	30	24	80.00	6	20.00
Second inspection,	8	7	87.50	1	12.50
Third inspection,	7	4	57.14	3	42.86
Fourth inspection,	19	16	84.21	3	15.79

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Randolph,	20	18	90.00	2	10.00
Second inspection,	1	–	–	1	100.00
Third inspection,	7	7	100.00	–	–
Taunton,	12	10	83.33	2	16.67
Second inspection,	15	9	60.00	6	40.00
Third inspection,	16	14	87.50	2	12.50
Townsend,	3	1	33.33	2	66.67
Second inspection,	2	–	–	2	100.00
Third inspection,	4	3	75.00	1	25.00
Webster,	4	–	–	4	100.00
Second inspection,	4	4	100.00	–	–
Weymouth,	27	19	70.37	8	29.63
Second inspection,	2	–	–	2	100.00
Third inspection,	13	7	53.85	6	46.15

Total number of dairies examined,	493
Number found to be free from objectionable conditions,	322
Number concerning which letters were sent,	171
Total number of conditions to which attention was called,	470
Percentage of dairies which passed inspection,	65.31

In addition to the above, 79 dairies were visited at which the sale of milk had been discontinued.

Included in the total number of dairies visited were 191 which had recently started in the milk-producing business and were inspected for the first time.

The names of the owners of the dairies found to be worthy of commendation follow: —

Attleborough.

Class A.

Fisher, John M.‡ ||

Class B.

Alger, Isaac ‡
Benson, John * †
Bonier Brothers *
Carpenter, Harry
Cobb, (Mrs.) Josephine ‡ ||
Cole, P. R.‡
Cooper, (Miss) M. A.‡
Fine, Charles ‡
Fischbach, John ‡
Friedman, Samuel ‡
Globus, M.‡
Kimball, A. L.‡ ||
Martin, Andrew C.‡
Mason, A. S.‡
Mott, E. E.‡
Pass, George ‡
Richardson, Henry ‡ ||
Sheffield, G. St. John ‡ ||
Sumner, W. L.
Thurber, C. F.
Tomlinson, R.
Wendall, Olaf O.‡ ||
Wood, Joseph ‡

Barnstable.

Class A.

Everett, Henry C.* †
Linnell, Frank ‡ ||

* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
|| Reported favorably on all previous inspections.

Class B.

Bacon, (Hon.) Robert W.‡ ||
Bassett, Charles * †
Bursley, John * †
Cammett, W. B.* †
Crosby, Aaron S.* †
Evans, Edward H.
Harris, Marcus H.* †
Jenkins, Henry
Kleinschmidt, Louie
Lawrence, Andrew * †
Marston, Howard
Mecarta, (Mrs.) Betsy * †
Morse, H. L.‡
Shuley, G. J.

BERKLEY.

Class B.

Allen, Edwin H.‡ ||
Briggs, Caleb ‡ ||
Cameron, John
Caswell, George E.*
Chase, E. A.‡
Colpitt, A. T.
Dean, Edmund P.‡ †
Fletcher, Lewis P.‡ †
Hall, W. G.*
Smith, Edward S.
Westgate, George E.‡

BOURNE.

Class B.

Burgess, A. W.
Dimmock, J. F.

DIGHTON.

Class A.

Bristol County Agricultural School
Marble, Charles C.* †

Class B.

Earl, Ralph
Eaton, Samuel J.‡
Gardner, G. W.
Hennessy, James *
Horton, G. E.
Horton, Herbert L.‡ ||
Horton, H. W.* †
Horton, Nathan B.‡ ||
Horton, R. P.
Pierce, Arthur
Walker, W. E.
Whitmarsh, F. A.

DOUGLAS.

Class B.

Converse, Palmer C.
Cook, Walter *
Kenyon, F. J.* †
Wallis, David A. E.* †

FOXBOROUGH.

Class B.

Comey, Herman A.‡ ||
Daniels, A. J.‡ ||
Emery, Cyrus W.‡
Gallant, Joseph
Garland, S. A.
Hill, (Miss) S. T.‡ ||
Morancy, I. W.
Morton, (Mrs.) A.* †
Stevens, William
Swift, (Mrs.) E. B.

GROTON.

Class A.

Keating, Geo.‡
Tuttle, A. C.‡

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
|| Reported favorably on all previous inspections.

Class B.

Connelly, John
Floyd, Geo. A.‡
Gay, H. H.
Heber, O. C.‡
Lewis, F. D.‡
Raddin, Joseph
Woods, Nesbit L.
Woods, W. A.‡

Hingham.

Class A.

Brewer, Estate of J. R.
Codman, Wm. C.* †
Damstra, Sytze § ||
Fearing, Watson B.* †
Jordan, H. G. § ||

Class B.

Bates, Arthur
Cushing, Harold M.
Damstra, Ynte * †
Fee, Peter F.
Fottler, Joseph A.* †
McKenna, Wm. H.* †
Nelson, Geo. W.
Schirmer Brothers * †
Threlfall, Jos. E.
"Town Farm"
Young, C. M. § ||

Holbrook.

Class A.

Brooks, Frank B.‡ ||
O'Neil Brothers

Class B.

Butler, Leonard
Poole, C. A.‡ ||
Smith, Albert

Hopedale.

Class B.

Vogel, Wm.
Westcott, A. W.

Marion.

Class A.

Dexter, Seth L.‡ ||

Class B.

Briggs, Benjamin B.
Marble, James H.
Vose, B. F.‡

Mattapoisett.

Class B.

Backus, A. S.‡
Dexter, E. A.*
Downing, M. O.
Ellis, Charles W.‡ ||
Hiller, Benjamin * †
Mahoney, J. F.
Pimental, Frank *
"Town Farm" * †

Newburyport.

Class A.

Norris, R. S.‡

Class B.

Bartlett, Charles S.‡ ||
Cook, David H.‡
Cooper, George E.
Mahoney, John
Menut, George A.
Poor, Benjamin
Winder, C. B. & N. R.‡

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

North Attleborough.

Class B.

Allen, C. Byron
Caldwell, H. P.‡ ||
Caldwell, W. H.‡ ||
Draper, G. B.‡
Eldridge, Horace ‡
Green, E. H.
Henshaw, S. H.‡
Hulse, M. & Son * †
Jacobs, John ‡
Johnson, O. W.* †
McCartney, Robert A.‡ ||
McLean, James M.‡
Nadau, L. N.
Rhodes, H. E.‡
Sweetland, R. M.‡
Tourtelott, A. F.‡

Pepperell.

Class AA.

Shattuck, Geo. E.‡ ||

Class A.

Greenhalge, Geo. T.
Hayes, Edw. F.
Turner, Frank E.* †

Class B.

Adams, G. W.‡ ||
Bancroft, Chas. H.
Blood, C. M.‡
Geiger, A. G.*
Gilson, A. A.‡ ||
Herrod, W. A.‡ ||
Jewett, C. H.‡
Kemp, Andrew P.
Lawrence, J. A.‡
Maynard, G. W.‡ ||
McDonald, (Mrs.) Jennie ‡
Pierce, W. E.‡
Richardson, L. P.‡
Robbins, Geo. L.* †
Robbins, H. D.‡
Rowell, I. J.‡
"Town Farm" ‡

Plainville.

Class B.

Carlson, Herman
Fisler, Henry ‡
Gifford, George B.
Moore, C. N.‡ ||
Owen, David *
Root Brothers * †
Smith, Sylvester ‡ ||
Stolworthy, George ‡ ||

Quincy.

Class A.

Fearing, Watson B.§ †
Goucher, C. A.§
National Sailors' Home ‡ ||
Sears, (Mrs.) R. A.

Class B.

Alnquist, George
Arnold, D. W.* †
Brown, Mary J.‡ ||
Conarty, Peter
Darr, A.
Dennehy, T. D.§
Dunham, Arthur H.
Field, John
Field, John Q. A.
Finn, Edward B.§ †
Fitzgerald, John J.§
Fostlo, James
Glidden, George
Griffiths, John J.* †
Hall, E. W.
Hodgkinson, B. F.§
Hunter, (Mrs.) Clarence § ||
Hyvonen, John ‡
Keisala, M.
Keith, H.
Kelly, William *
Kennard, H. G.§
Kundsin, (Mrs.) J.
Littlefield, Walter D.
Lord, (Mrs.) Mary R.§
Lund, John §
Malone, John
McCormick, Francis §
Moorhead, James §
Newcomb, W. T.
Niemi, Solomon ‡
Nowland, James M.§ ||
Paradices, Thomas * †
Pearson, Martin
Pelto, Aeno * †
Pope, Hubert G.
Silverman, David
Sprude Brothers
Sward, Edla E.* †
Taylor, (Mrs.) S. F.§ ||
Trevo, (Mrs.) Anna K.
Trask, Edw. V.
Vincent, Augustus §
Wetmore, G. A.
Wight, Gilbert M.* †
Young, E. F.
Zarvattoni, Stephen †

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

Randolph.

Class A.

Nelson Brothers ‡ ||

Class B.

Ayers & Frank
Bowley, Chas. L.
Burrell, E. F.
Clausen, Peter
Collins, M. J.‡
Cushman, L. W.
Dixon, Hannah C.
Evans, Fred
Fahey, Patrick ‡
Jaques, Paul
Larsen, Peter
Linfield, Walter
Lothrop, E. E.‡
Manley, Frank
Newcomb, R. B.
Payne, Wm. H.
Powers, Charles R.‡ ||
Randell, N. F.
Reilly, John E.
Sass, Tony
Stetson, Lincoln ‡
Swan, Albert W.
Tucker, Alfred H.
Wales, Frank C.‡ ||

Taunton.

Class A.

Howland, (Dr.) J. P.* †
Lincoln, A. N.‡
Lincoln, R. F.‡
Morlock, B. J.‡
Pierce, W. B.‡
Soper, George O.‡ ||

Class B.

Briggs, William E.‡
Buckley, Timothy * †
Chase, T. C.* †
" City Home "
Conway, A. J.*
Crapo, N.* †
Gould, George *
Harriman, Forrest M.
Hennessy, Patrick ‡
Hallowell, B.‡ ||
Jones, S. D.
King, J. Lewis *
Leonard, Abbot
Leonard, (Est. of) M. M.‡ †
Lincoln, (Mrs.) Geo. E.‡
Lincoln, J. W.‡
Lord, J.
Marguerito, Antonio
Paine, F. F.‡ †
Pierce, Clarence I.* †
Sims, Albert
Sousa, John B.* †
Spafford, C. A.
Sylvia, Manuel
Wade, John T.‡
Walker, William L.
Williams, Roger ‡ ||

Townsend.

Class B.

Barber, O. D.‡ ||
Beckonert, G. H.‡ ||
Conant, F. E.
"Town Farm" ‡

Webster.

Class A.

S. Slater & Sons, Inc.* †

Class B.

Snow, A. R.* †
"Town Farm" * †
Townsend, William J.*

Weymouth.

Class A.

Shaw, B. W.

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
|| Reported favorably on all previous inspections.

Class B.

American Agricultural Chemical Co.	Doty, Wm. L.	Murray, George
Belcher, Elmer E.‡	Ford, David	Patten, G. W.
Bicknell, John O.	Franks, Joseph H.	Raymond, T.
Cohan, Dennis ‡	Gowing, F. W.	Richards, Henry A.‡
Cowing, W. F.	Hegarty, Matthew	Sanborn, E. R.
Coyle, Hugh P.‡	Holbrook, S. L.	Sherrick, Fred J.‡
Coyle, M. W.	Hunter, George	Smith, H. H. I. & Sons
Curtis, J. Walter	Jones, Fred	"Town Farm" ‡
	Morris, Thomas ‡	

OPINION OF ATTORNEY-GENERAL CONCERNING DECOMPOSED EGGS.

THE COMMONWEALTH OF MASSACHUSETTS,
DEPARTMENT OF THE ATTORNEY-GENERAL, BOSTON, June 6, 1913.

MARK W. RICHARDSON, M.D., *Secretary, State Board of Health.*

DEAR SIR: — By a letter dated May 24 you have submitted for my consideration an inquiry relating to St. 1913, c. 654, which is entitled "An Act relative to the sale and use of eggs unfit for food." This inquiry is in terms as follows: —

Section 1 of this chapter states in a general way that eggs that are unfit for food shall not be sold, offered for sale, exposed for sale or had in possession with intent to sell.

Section 2 defines under what conditions eggs shall be deemed to be unfit for food. This definition, however, would seem to be absolutely inadequate, inasmuch as, in accordance with expert chemical opinion, eggs begin to decompose immediately after they are laid, so that strictly enforced this law would practically prohibit the sale for food of all eggs of whatever age or character.

Will you not, at your earliest convenience, advise this Board as to what lines of action it should pursue under the circumstances?

Section 1 of chapter 654 provides that —

It shall be unlawful . . . to sell, offer for sale, expose for sale, or have in possession with intent to sell, eggs that are unfit for food within the meaning of this act.

Section 2 is as follows: —

This act shall apply to eggs, which, either before or after removal from the shell, are wholly or partly decayed or decomposed, and to eggs in the fluid state, any part of which is wholly or partly decayed or decomposed, and to

‡ Third inspection.

eggs, in the fluid state or otherwise, that are mixed with parts of eggs which are derived from eggs that are wholly or partly decayed or decomposed. This act shall also apply to frozen masses of broken eggs, if the mass contains eggs that are wholly or partly decayed or decomposed, or that are mixed with parts of eggs that have been taken from eggs that were wholly or partly decayed or decomposed.

Section 3 provides that —

It shall be unlawful for any person, firm or corporation, or any officer, agent or employee thereof, to use eggs that are either wholly or partly decayed or decomposed in the preparation of food products. And it shall be unlawful to deliver, sell, purchase or accept wholly or partly decayed or decomposed eggs in or at any establishment where food products are prepared or manufactured.

Section 5 provides that —

The state board of health shall enforce the provisions of this act.

Section 6 provides that —

Nothing in this act shall be construed to prohibit the purchase, sale or possession for other than food purposes of rotten, decayed or partly decayed eggs which are unfit for food.

The provisions above quoted are loosely drawn and inartificial in terms, but it is, in my opinion, clear from a consideration of the act as a whole that it was intended as a prohibition against the sale of eggs which, by reason of decay or decomposition, are unfit for use as food. It may be true that standing alone the language of sections 2 and 3 is broad enough to include all eggs which are wholly or partly decayed or decomposed, without reference to their fitness or unfitness to be used as food, but if, as stated in your inquiry, decomposition and decay in eggs begin immediately after they are laid, a literal construction of said sections would prohibit any sale of eggs at all, which could not have been the intent of the Legislature. The language of these sections must, therefore, be so far modified by the other provisions of the act as to limit the prohibitions contained therein to eggs which by reason of decay or decomposition are unfit for food. Any other construction would result in an absurdity.

Very truly yours,

JAMES M. SWIFT,

Attorney-General.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., OF THE MONTHLY BULLETIN OF THE STATE BOARD OF HEALTH OF MASSACHUSETTS, PUBLISHED MONTHLY AT BOSTON, MASS., REQUIRED BY THE ACT OF AUG. 24, 1912.

NOTE. — This statement is to be made in duplicate, both copies to be delivered by the publisher to the postmaster, who will send one copy to the Third Assistant Postmaster General (Division of classification), Washington, D. C., and retain the other in the files of the post office.

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Average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date of this statement. (This information is required from daily newspapers only.)

(Signed) MARK W. RICHARDSON,

(Signature of editor, publisher, business manager or owner.)

Secretary Massachusetts State Board of Health.

Sworn and subscribed before me this thirtieth day of June, 1913.

(Signed) PETER F. J. CARBEY,

(SEAL.) *Justice of the Peace.*

(My commission expires Aug. 30, 1913.)

THE CONTROL OF THE CARELESS AND INCORRIGIBLE CONSUMPTIVE.[1]

By Mark W. Richardson, M.D., Boston, Secretary of the State Board of Health of Massachusetts.

The title of this paper carries with it almost of necessity four assumptions. First, that consumption, or tuberculosis of the lungs, is a disease communicable from person to person, and, therefore, dangerous to the public health; secondly, that such a disease must be the subject of adequate administrative control; thirdly, that this control, as exercised at the present time, is far from satisfactory; and fourthly, that early and energetic action must be taken to correct the obvious defects in our prophylactic machinery.

The statement that consumption is a communicable disease will meet with no attempt at controversion from this audience. That consumption is a contagious disease is to my mind also incontrovertible, be the contact direct from the donor to the recipient, as in droplet infection incident to cough, or as in kissing; or more indirect, as seen in the use of common drinking cups or in the inhalation of dried sputum in the form of dust.

Our second proposition, that a disease thus shown to be communicable in a marked degree must be subject to adequate administrative control, needs no argument.

That this control of consumptives as exercised at the present time is far from satisfactory is the almost unanimous opinion of those who know most about the subject.

It cannot be too strongly emphasized that the basic problem in the control of consumption is a sputum problem, and in this regard consumption does not differ materially from diphtheria, scarlet fever and measles, but, although consumption causes annually nearly four times as many deaths as these other diseases combined, health authorities, even if they try their best, cannot begin to exercise, at the present time at least, over this disease the control easily possible with the other infections just mentioned.

The reason, of course, is not far to seek. Consumption is a slow-going process. The patient oftentimes seems and feels so well that it is hard to believe such an individual dangerous to those in his immediate neigh-

[1] Read at the Massachusetts Conference on Tuberculosis, Holyoke, Mass., March 22, 1913. Reprinted from Boston Medical and Surgical Journal, May 29, 1913.

borhood. The relation of cause to effect seems so remote that its importance is oftentimes neglected. And yet the infection is a sputum infection just as much as it is in diphtheria, and, although running a chronic course, it is in a strict sense just as contagious. Indeed, if the annual consumptive mortality in a community occurred within a fortnight following an acute course of the disease, there would be no doubt or hesitation in the minds, either of the health officials or of the laity, as to what measures of control should be immediately inaugurated. Nobody questions that chronic carriers of disease-producing germs such as those of diphtheria or typhoid must be brought under adequate control, by force if necessary. The problem with the chronic tuberculosis germ carrier is exactly similar. Such a carrier should be under immediate close supervision by the health authorities. To be sure, if he be intelligent enough and public spirited enough to take proper precautions he may be allowed undoubtedly to associate with his fellows. If not, however, there is no reasonable doubt that he must be so restrained as not to constitute a danger to the public health.

Inasmuch as, therefore, there can be no doubt that the ignorant, careless and incorrigible consumptive is a great danger to the public health, why is it that most health authorities have made so little effort to control such a dangerous individual?

The chief reason for this failure to act has been, without question, the knowledge that public opinion in most communities would not support vigorously such a course. A second reason has been that few cities or towns have had at their disposal institutions properly equipped for the care of such chronic diseases as tuberculosis. A third reason has been that many legal advisers to boards of health have ruled that the law, as at present enacted, would not justify the forcible restraint of these incorrigible consumptives, and that boards of health in attempting to enforce such restraint would thereby render themselves liable to suits for damages.

Personally, I do not believe these grounds to be well taken, and in support of my contention I will cite the experience and practice of the Boston board of health. Boston has, of course, fairly adequate institutional equipment for the care not only of its acute exanthemata and diphtheria, but also of consumption. The health department, furthermore, has detailed to it by the police commissioner, and for its especial service, 12 police officers. Whenever a case of disease dangerous to the public health is discovered, which case cannot be properly isolated at home, the patient is advised to go to the proper isolation hospital. If he refuses, the following procedure is carried out. The secretary of the board issues to the police officer the following order: —

........................191...

To...................................., *Inspector.*

You are hereby ordered to remove.........................now ill with .... at .... Street, to the hospital for that disease.

By direction of the Board of Health,

........................., *Secretary.*

It is arranged, furthermore, that an ambulance reaches the house simultaneously with the officer. The patient is then removed, forcibly if necessary, to the proper hospital.

The law under which this action is taken is section 36 of chapter 75 of the Revised Laws.

Chapter 75, Revised Laws.

Town boards of health shall provide accommodations for persons with dangerous diseases. Wage-earners held in quarantine shall be compensated.

Section 36. If a disease which is dangerous to the public health breaks out in a town, or if a person is infected or lately has been infected with any such disease, the board of health shall immediately provide such hospital or place of reception, and such nurses and other assistance and necessaries, as is judged best for his accommodation and for the safety of the inhabitants, and the same shall be subject to the regulations of the board. The board may cause any sick or infected person to be removed to such hospital or place, if it can be done without danger to his health; otherwise the house or place in which he remains shall be considered as a hospital, and all persons residing in or in any way connected therewith shall be subject to the regulations of the said board, and, if necessary, persons in the neighborhood may be removed. When the board of health of a city or town shall deem it necessary in the interest of the public health to require a resident wage-earner to remain within such house or place, or otherwise to interfere with the following of his employment, he shall receive from such city or town during the period of his restraint compensation to the extent of three-fourths of his regular wages: *provided, however,* that the amount so received shall not exceed two dollars for each working day.

Once placed in such an isolation hospital, the patient may not leave without permission of the board of health, for, as stated in the above law, "all persons residing in or in any way connected therewith [*i.e.*, the hospital] shall be subject to the regulations of said board of health," and the Boston board of health, as empowered by this section, has made the following regulation: —

1. Whoever is infected with smallpox, scarlet fever, diphtheria, measles, typhoid fever, varicella, cerebro-spinal meningitis, anterior poliomyelitis or any other disease dangerous to the public health, shall immediately proceed to some isolated place or room designated by the board of health, and no person who has been so affected shall leave such place or room, and no article shall be removed from such place or room, until the board of health shall certify in writing that all danger of communicating such disease to others is passed.

This regulation, furthermore, is made to apply not only to patients who have been forcibly placed in such hospitals, but also to those who entered such institutions voluntarily. The scope of action, moreover, has included such unreportable diseases as syphilis.

Under the above-mentioned statute and regulations many cases of tuberculosis have been removed to the hospital. In most cases the removal has not met with opposition. Forcible removal has been carried out as follows: 1910, 25 cases; 1911, 24 cases; 1912, 31 cases.

The validity of the board's action has been attacked a number of times in the courts in relation to scarlet fever and diphtheria, but never with success. No patient forcibly removed for tuberculosis has as yet appealed against such action to the courts. The control just described can, of course, be exercised only within the city limits. Once out of the city the health authorities become powerless further to restrain a consumptive. Cases, however, which through lack of settlement come under the charge of the State Board of Charity may be forcibly removed by this body in accordance with chapter 395, Acts of 1904, which reads as follows: —

CHAPTER 395, ACTS OF 1904.

AN ACT RELATIVE TO THE CARE OF PERSONS INFECTED WITH DISEASES DANGEROUS TO THE PUBLIC HEALTH.

Be it enacted, etc., as follows:

SECTION 1. The state board of charity may, if found expedient, remove any person who is infected with a disease dangerous to the public health, and who is maintained or liable to be maintained by the commonwealth, to any hospital provided for state paupers, or may provide such place of reception for such person as is judged best for his accommodation and the safety of the public, which place shall be subject to the regulations of the board, and may remove such person thereto.

SECTION 2. Any expenses incurred in carrying out the provisions of this act may be paid from the annual appropriation for expenses in connection with smallpox and other diseases dangerous to the public health.

SECTION 3. This act shall take effect upon its passage. [*Approved June 2, 1904.*

The State Board of Charity has never acted under this law in relation to tuberculosis. The law was passed to facilitate removal of lepers, and it has been invoked only in cases of leprosy. As to action taken along similar lines by local boards of health other than Boston, I find only the following examples: —

In Attleborough several years ago the local board of health had much trouble with a certain individual, now deceased, who was far advanced with tuberculosis. He was a miserable drunken person whom no one could control, and the board secured his admission to Tewksbury, from which institution he promptly eloped. The board, however, watching its opportunity, caused this man's arrest, when intoxicated, as a common drunk, and he was committed to the State Farm at Bridgewater and treated there in a tuberculosis ward. At the end of his term he returned to Attleborough and ultimately died there, no further attempt being made apparently to control his actions. Indeed, I understand that the Attleborough town solicitor gave as his opinion that the existing law would not permit the board to restrain by force an incorrigible and careless tubercular person.

In Holyoke, furthermore, I believe the board of health arrested an individual sometime ago and arraigned him before the court because he left the tuberculosis hospital and refused to return. His case was continued, however, as he returned to the institution, where he died.

Haverhill is at the present time prosecuting an important case of the character under discussion. This individual was arrested on a complaint by the Haverhill board of health acting under section 46 of chapter 75 of the Revised Laws, which reads as follows: —

CHAPTER 75, REVISED LAWS.

WARRANT MAY ISSUE FOR REMOVAL OF INFECTED PERSONS.

SECTION 46. A magistrate authorized to issue warrants in criminal cases may issue a warrant directed to the sheriff of the county or his deputy, or to any constable or police officer, requiring him, under the direction of the board of health, to remove any person who is infected with contagious disease, or to impress and take up convenient houses, lodging, nurses, attendants and other necessaries. The removal authorized by this section may be made to any hospital in an adjoining city or town established for the reception of persons having smallpox or other disease dangerous to the public health, provided the assent of the board of health of the city or town to which such removal is to be made shall first have been obtained.

A writ of habeas corpus is now sought by this man through his counsel, the writ being directed to the superintendent of the Haverhill City Hospital, where the patient is detained. The patient claims that he has not

tuberculosis, and that he is being detained in violation of his constitutional rights. I may say, however, that similar habeas corpus proceedings have been instituted in the past against the Boston board of health, without success.

As regards section 46 you will also note that the removal contemplated relates only to institutions either in the affected community or in one adjoining thereto. Removal to more distant institutions, such as the State sanatoria, is not possible. It is, therefore, proposed to amend this section so as to allow such removal to be made to any public institution within the Commonwealth provided for such cases, irrespective of the proximity of the institution to the community affected.

Finally, the opinion seems justified that health boards have support in law for much more drastic action as regards the careless and incorrigible consumptive than has been supposed, and that such legal support can be invoked with success, especially by those communities, such as Boston, which are provided with isolation hospitals for consumptives.

CONTROL OF THE CARELESS AND INCORRIGIBLE CONSUMPTIVE.[1]

By C. T. Callahan, Esq., Holyoke, District Attorney, Western District, Holyoke, Mass.

The discovery by the medical profession that tuberculosis is a communicable disease, and that, to prevent the spread of the scourge, some control of the movements and conduct of persons afflicted with the disease is necessary, gives rise to the very important question as to how far the State may invade the personal liberty of the individual in the attainment of its object. My treatment of the subject, "The Control of the Careless and Incorrigible Consumptive," will be that of a lawyer addressing himself to a consideration of the rights of the public on the one hand and of the patient on the other. Whether tuberculosis is a disease which can be cured, whether the danger of infection is so great as to threaten the whole community, and whether treatment of the disease in isolation may reasonably be expected to exterminate it, are questions peculiarly for the determination, in the first instance, of the medical profession. If we except certain phases of the subject of insanity, it may be said that the law has always given profound respect to medical opinion. Thus, if the doctors should agree that tuberculosis was a communicable disease, men-

[1] Read at the Massachusetts Conference on Tuberculosis, Holyoke, Mass., March 22, 1913. Reprinted from Boston Medical and Surgical Journal, May 29, 1913.

acing to the public health, and that it could be appreciably controlled by isolation, their conclusion would be accepted by the courts as a fact of common knowledge, and would be a strong element in their consideration of the extent of the powers of the State to suppress the disease.

Assuming the propositions advanced in favor of physical restraint to be established, how far can the State undertake to control the careless and incorrigible consumptive? In the last two centuries society has constantly enlarged its right to restrain persons afflicted with disease, as a matter of self-protection. By the common law of England the only remedy for the suppression of sources of disease was an action for damages or an indictment for nuisance. As medical investigation of public health probed deeper and deeper into the cause of disease, the law responded to the demands of the profession for corrective measures, and the enactment of such legislation has repeatedly raised the question how far the personal rights of the victim may be invaded in the interests of the common good. A few broad considerations lie at the foundation of all consideration and all discussion of the subject. It has always been held that, with birth itself, citizens are endowed with the right to enjoy life, liberty and property. But man has a right to natural freedom only in so far as the exercise of it is not inconsistent with the rights of others. The limitation is clearly stated in the preamble of our own Bill of Rights: "The body politic . . . is a social compact by which the whole people covenants with each citizen, and each citizen with the whole people, that all shall be governed by certain laws for the common good." In connection with this should be read the constitutional provision creating the right of men to enjoy and defend their lives and liberties, and the article granting full power and authority to the General Court to enact "all manner of wholesome and reasonable orders, laws, statutes, ordinances, directions and instructions . . . as they shall judge to be for the good and welfare of this Commonwealth."

The exercise of the police power thus conferred on the Legislature has seldom been interfered with by the courts. In the phrase "wholesome and reasonable orders" and so forth, there would seem to be reserved to the courts a power to review and set aside an act of the Legislature relating to the public health which might unduly invade the personal liberties of citizens. But, as a rule, the courts have hesitated to place limits upon the legislative exercise of the police power. It has been held that it extends generally to the protection and preservation of the public health on the principle that the rights of individuals must give way to the community welfare. It has been held to be true of the right to personal liberty as well as the right to property. The power to hold persons in quarantine has been upheld. It has been clearly settled in this Com-

monwealth that "a man afflicted with the smallpox, or any other contagious disease dangerous to public health, has for the time being lost his right to personal freedom, and may be compelled to yield to restraint, carried, if necessary, even to compulsory isolation." So that the public officers, in their discretion, might even remove to a hospital the person fallen ill, or care for him in the house in which he resided. On the general principle that individual right must yield to public right, it has been held that a person suffering loss of rents from the location of a properly conducted hospital in his neighborhood has no remedy. The statute authorizing boards of health to require the vaccination of all the inhabitants, and imposing a fine for a violation of such requirement, was held constitutional in this State, and this decision was affirmed by the Supreme Court of the United States.

But decisions of this kind in this State appear to be limited to cases of smallpox or other virulent epidemics. That may be, and probably is, due to the fact that boards of health have been reluctant to exercise the powers conferred on them by the Legislature.

Before 1906 the statutes authorized boards of health, if a disease dangerous to public health broke out, or if a person was infected, to provide immediately a hospital or place of reception, and to cause any sick or infected person to be removed to it if it could be done without danger to his health, in which last event the house or place where the sick person was could be considered as a hospital, and the people living in the house could be subjected to the regulations of the board, and, if necessary, persons in the neighborhood might be required to move away. This power could be enforced by a warrant of the courts directed to a sheriff or his deputies, or to any constable or police officer, requiring them, under the supervision of the board, to remove such person or "to impress and take up convenient houses, lodging, nurses, attendants and other necessaries." However, it was provided that these powers should not apply to smallpox except in cases of persons residing in boarding-houses or hotels, or in cases of two or more families occupying the same dwelling, or in other cases in which, in the opinion of the board and the attending physician, the case could not be properly isolated. In 1906, in addition to other amendments not necessarily material to this discussion, this statute was amended so that the power of removal of patients from their homes is no longer limited as to cases of smallpox, but appears to be restricted as to all diseases dangerous to the public health. It would appear, therefore, that even now the authority of removal in all cases is limited to boarding-houses or hotels or to dwellings occupied by two or more families, unless, in the opinion of the board, the case cannot be properly isolated. The opinion of the attending physician is eliminated

as a factor in determining whether the case can or cannot be isolated, and in all probability the opinion of the board formed in good faith would be held conclusive in a case where the sick person was not living in a hotel, boarding-house or tenement building. By a later statute, passed in 1907, the State Board of Health was authorized and directed to define what diseases shall be deemed to be dangerous to public health. I am informed that the State Board, in pursuance of this duty, has declared tuberculosis to be such a disease. Last year the Legislature recognized it in precise terms as a disease dangerous to the public health, in chapter 151, amending section 35 of chapter 75 of the Revised Laws, relating to the establishment and maintenance of hospitals in cities and towns. In the amendment these institutions are described as "hospitals for the reception of persons having smallpox, diphtheria, scarlet fever, tuberculosis or other diseases dangerous to the public health as defined by the state board of health."

If we assume that in the statutes mentioned the Legislature has clearly expressed its intention to confer upon boards of health the power to enforce involuntary isolation in cases of tuberculosis, will the Supreme Judicial Court uphold the constitutionality of the Legislature's exercise of its police power in this particular kind of disease? The question ought to be put to that tribunal purely on its merits, and ought not to be complicated by unnecessary technicalities. It would be good preliminary tactics to codify all the statutes relating to public health, so there would be no possible question raised of the Legislature's meaning to bring cases of consumption within the power of boards to compel involuntary isolation.

Thus presented, the one issue for the court would be the constitutionality of the law. There can be little doubt that involuntary isolation will be resisted by many persons suffering from this disease. The issue presents some important and interesting considerations. It will be observed that in the cases in which the exercise of the police power in the suppression of disease dangerous to the public health has been upheld, the courts had to deal with diseases vastly different in their nature, their infectiousness and their duration. For example, in dealing with smallpox cases it was indisputable that the disease spread rapidly, threatening entire communities; that isolation was necessary to its prevention; and, more important than all to the question before us, that, owing to the usual course of the disease, compulsory isolation was comparatively brief and meant no more to the patient, if he survived, than a temporary restraint of his personal liberty. I assume in favor of the medical profession that it would have no difficulty in establishing as facts in the case that tuberculosis is infectious, and that isolation would tend to suppress it. But

the issue presented, — the invasion of personal liberty, — guaranteed by all constitutions and by all law, is of such tremendous importance to the individual that I cannot conceive of a refusal by the court to receive evidence upon the question whether the law is "wholesome and reasonable" within the meaning of the Constitution. Upon this question it is of prime importance to bear in mind that in the present state of medical treatment the curability of tuberculosis is at least in grave doubt. Unlike smallpox, diphtheria and scarlet fever, tuberculosis is not a disease of short duration. To isolate in some stages of it would mean a denial of personal liberty for life. Is the infectiousness of the disease of such a character that to allow unlimited personal liberty to its victims constitutes a real danger to public health? Would you be sure of your ground in maintaining that it assumed the character of an epidemic, as in the other diseases mentioned? If these questions can be answered affirmatively, would the court say that a law under which a sufferer might be deprived of his personal liberty for the rest of his days was "wholesome and reasonable?" To illustrate: it would be difficult to maintain that the application of such a law to cases of diabetes or pneumonia, for example, would be held "wholesome and reasonable." On the other hand, the peculiar disease under discussion, which enables its victim to walk about almost to his last hours, compelling him by its very agonies to cough into the air and to spit out, wherever he may be, germs that may prostrate others, would seem to fortify the demand of the doctors for power to control the movements of such agents of death. Whether authority to isolate, with its attendant restriction of liberty, severance of family relations and consequences to property rights, will be upheld by our highest court, I do not undertake to say.

However, it may at least be said that the contentions of the profession are entitled to the highest respect. A demand, fortified by so strong authority, should be passed upon as soon as possible for the common welfare. As citizens desiring the passage of "wholesome and reasonable" laws, we should all be anxious for the speedy determination of a question involving such tremendous consequences to mankind. As a lawyer, I shall be keenly interested in the court's treatment of it. By all means press the issue. Ask for a codification of the statutes bearing on the subject. Proceed under them, and let the Supreme Judicial Court say the word which shall mean that the carrier of this disease may be isolated in the interests of the general welfare, or that the medical profession must define new rules, with penalties attached, for legislative sanction for the regulation of their conduct while at liberty.

REPORT UPON A MILK-BORNE OUTBREAK OF TYPHOID FEVER IN QUINCY DURING THE MONTH OF APRIL, 1913.

Reported by H. Linenthal, M.D., State Inspector of Health.

During the month of April a small outbreak of typhoid fever occurred in Quincy, which, owing to prompt action, was prevented from assuming larger proportions. The details of the outbreak are as follows.

The following are the dates when cases were reported to the local board of health: —

April 10,	5 cases.
April 11,	4 cases.
April 14,	3 cases.
April 16,	1 case.
April 17,	1 case.
April 20,	1 case.

The occurrence of the cases according to first symptoms, as nearly as could be ascertained, was as follows: —

March 29,	1 case.
March 31,	2 cases.
April 1,	3 cases.
April 2,	1 case.
April 4,	3 cases.
April 5,	2 cases.
April 6,	2 cases.
April 8,	1 case.

As soon as the first five cases were reported to the Quincy board of health, on April 10, the State Board of Health was notified by telephone, and on the same day I visited Quincy and with Dr. Jones of the Quincy board of health made an investigation of the situation. All the 5 cases were on one milk supply.

An investigation of the milk barn of the supply in question did not reveal any source of contagion. No history of typhoid was obtained from any of the men handling the milk, and Widals taken from all of them later proved to be negative. It was suspected that the infection came from one of the farms in Connecticut where the milk was produced. The dealer in question bought daily 90 cans of milk from one of the large

milk contractors in Boston. This milk came direct to him from the farms.

The local board of health was advised to stop at once that supply or to see that it was properly pasteurized. All the physicians in Quincy were telephoned to, and they were asked to report immediately to the board of health any suspicious cases that they might have under observation. The milk contractor in Boston was notified of the situation and an investigation on the farms in Connecticut was promptly started.

The assumption that this was a milk-borne outbreak was later confirmed by the fact that all the subsequent cases occurred on the same milk supply. On the day following the report of the first cases all the milk supplied to the local dealer by the milk firm in Boston was pasteurized. A physician in Danielson, Conn., reported that on one of the farms which contributed to the supply in question a child was ill, and was suspected of having typhoid. The diagnosis was later definitely established by a positive Widal test. The milk from this farm was promptly excluded.

There is little doubt but that this case of typhoid, who had been ill for several weeks before a diagnosis was made, was the source of the infection. From the incidence of the cases it would appear that it was a single infection, only one can probably being infected. The receptacle in which the milk was mixed in Quincy was a small one, which fact accounts for the comparatively small number of cases of typhoid that occurred, for only a portion of the entire milk was mixed with that of the infected can.

This outbreak indicates the value of prompt action and co-operation between the State and local health authorities and milk dealers.

NEW LEGISLATION.

Resolves of 1913, Chapter 118.

Resolve to provide for a codification of the health laws of the commonwealth.

Resolved, That the state board of health is hereby directed to codify the health laws of the commonwealth, and to report the codification to the general court not later than the tenth day of January in the year nineteen hundred and fourteen, together with a plan for the more efficient local administration of the said laws. For this purpose the said board may employ legal assistance and may expend a sum not exceeding five hundred dollars. [*Approved June 13, 1913.*

Acts of 1913, Chapter 743.

An Act relative to the manufacture and sale of ice cream.

Be it enacted, etc., as follows:

Section 1. Substances manufactured and sold under the general name of "ice cream" shall contain not less than seven per cent of milk fat and if flavored with fruit shall be flavored only with sound, clean, matured fruit, and if containing nuts shall contain only sound, matured, non-rancid nuts.

Section 2. Violation of the provisions of this act shall be punished, at the discretion of the court, by a fine not exceeding one hundred dollars.

Section 3. Inspectors of milk shall have the same authority in regard to any suspected violation of any provision of this act and relative to the enforcement thereof which they have under section forty-two of chapter fifty-six of the Revised Laws. [*Approved June 6, 1913.*

Acts of 1913, Chapter 761.

An Act to safeguard the public health against unclean milk containers and appliances used in the treatment and mixing of milk.

Be it enacted, etc., as follows:

Section 1. Vessels used as containers in the holding, handling or sale of milk to be sold, or intended for sale, shall be clean and free from foreign deposits upon the inside. Whoever, by himself or by his servant or agent, or as the servant or agent of another person, sells, exchanges or delivers, or has in his custody or possession with intent to sell, exchange or deliver, milk in vessels used as containers unclean upon the inside or having foreign deposits upon the inside, shall be punished by a fine of not more than fifty dollars.

Section 2. All appliances, implements, utensils, strainers or materials used in milking and in the treatment or mixing of milk to be sold or intended for sale shall be clean and free from foreign deposits. Whoever, by himself or by his servant or agent, or as the servant or agent of another person, sells, exchanges or delivers, or has in his custody or possession with intent to sell, exchange or deliver, milk obtained, treated or mixed by the use of appliances, implements, utensils, strainers or materials unclean or having foreign deposits shall be punished by a fine of not more than fifty dollars. [*Approved June 10, 1913.*

Acts of 1913, Chapter 795.

An Act relative to the false stamping and labelling of receptacles containing articles of food.

Be it enacted, etc., as follows:

Section twenty-four of chapter seventy-five of the Revised Laws as amended by chapter two hundred and thirty-six of the acts of the year nineteen hundred and five and by chapter three hundred and five of the acts of

the year nineteen hundred and six, is hereby further amended by striking out the said section and inserting in place thereof the following: — *Section 24.* Whoever falsely stamps or labels any cans, jars or other packages containing fruit or food of any kind, or permits such stamping or labelling, or, except as hereinafter provided, violates any of the provisions of sections sixteen to twenty-seven, inclusive, shall be punished by a fine of not less than twenty-five nor more than five hundred dollars; and whoever knowingly sells such goods so falsely stamped or labeled shall be punished by a fine of not less than ten nor more than one hundred dollars. [*Approved June 13, 1913.*

Acts of 1913, Chapter 622.

An Act relative to the publication of the manual of health laws.

Be it enacted, etc., as follows:

Section one of chapter two hundred and thirty of the acts of the year nineteen hundred and two is hereby amended by striking out the words "five hundred", in the sixteenth line, and inserting in place thereof the words: — one thousand, — so as to read as follows: — *Section 1.* The state board of health is hereby authorized to publish for general distribution such parts of its annual report and such other matter as it may deem adapted to promote the interests of the public health in this commonwealth: *provided,* that the expense of such publication is paid out of the appropriation for the general expenses of the board and does not exceed in any one year the sum of five hundred dollars. The board is also authorized to publish not oftener than once in three years, beginning with the year nineteen hundred and two, a manual of the laws relating to boards of health in this commonwealth, together with such other information upon the same subject as the board may deem expedient, the same to be distributed among the local boards of health throughout the commonwealth. The cost of such publications shall not exceed one thousand dollars for each edition and shall be paid out of the appropriation for general expenses of the board. [*Approved May 8, 1913.*

Resolves of 1913, Chapter 85.

Resolve to provide for an investigation of impediments to marriage.

Resolved, That the state board of health and the state board of insanity are hereby empowered and directed jointly to investigate, and to report to the general court, on or before the second Saturday of January next, what further impediments to marriage, if any, should be recognized by law in this commonwealth. If they make any recommendations they shall include in their report drafts of bills suitable for carrying them into effect. [*Approved May 8, 1913.*

Sale of Poisons.

Revised Laws, 213. (*Cf.* 1910, 172, § 1.) (Amended by Chapter 263, Acts of 1912, and Chapter 585, Acts of 1913.)

Certain poisons must bear red labels, and their sale shall be recorded.

Section 2. Whoever sells arsenic (arsenious acid), atropia or any of its salts, chloral hydrate, chloroform, cotton root and its fluid extract, corrosive sublimate, cyanide of potassium, Donovan's solution, ergot and its fluid extract, Fowler's solution, laudanum, McMunn's elixir, morphia or any of its salts, oil of pennyroyal, oil of savin, oil of tansy, opium, Paris green, Parson's vermin exterminator, phosphorus, prussic acid, "rough on rats", strychnia or any of its salts, tartar emetic, tincture of aconite, tincture of belladonna, tincture of digitalis, tincture of nux vomica, tincture of veratrum viride, compounds of fluorine, or carbolic acid, without the written prescription of a physician, shall affix to the bottle, box or wrapper containing the article sold a label of red paper upon which shall be printed in large black letters the name and place of business of the vendor and the words *Poison* and *Antidote,* and the label shall also contain the name of an antidote, if any, for the poison sold. He shall also keep a record of the name and quantity of the article sold and of the name and residence of the person or persons to whom it was delivered, which shall be made before the article is delivered and shall at all times be open to inspection by the officers of the district police and by the police authorities and officers of cities and towns; but no sale of cocaine or its salts shall be made except upon the prescription of a physician. Whoever neglects to affix such label to such bottle, box or wrapper before delivery thereof to the purchaser or whoever neglects to keep or refuses to show to said officers such record or whoever purchases any of said poisons and gives a false or fictitious name to the vendor shall be punished by a fine of not more than fifty dollars. The provisions of this section shall not apply to sales by wholesale dealers or manufacturing chemists to retail dealers, or to a general merchant who sells Paris green, London purple or other arsenical poisons in unbroken packages containing not less than one-quarter of a pound, for the sole purpose of destroying potato bugs or other insects upon plants, vines or trees, except that he shall record each sale and label each package sold, as above provided. Nor shall the provisions of this section apply to sales of compounds containing not more than fifty per cent of sodium fluorine intended solely for the destruction of roaches, ants or other household insects when sold in sealed metal packages containing not less than one fourth of a pound plainly labeled in such a manner as to show the purposes for which the preparation is intended.

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OF

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APPROVED BY
THE STATE BOARD OF PUBLICATION.

RETURNS OF DISEASES.

Cases of Diseases declared by the State Board of Health to be Dangerous to the Public Health.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending —				
	July 5.	July 12.	July 19.	July 26.	Total.
Diphtheria,	90	111	100	81	382
Measles,	332	309	160	114	915
Scarlet fever,	74	60	54	60	248
Typhoid fever,	15	35	44	61	155
Tuberculosis, pulmonary (or not classified),	115	150	157	129	551
Tuberculous meningitis,	2	5	2	2	11
Tuberculosis, other forms,	3	9	11	2	25
Cerebro-spinal meningitis,	–	3	1	1	5
Whooping cough,	30	63	67	49	209
Varicella,	41	45	19	16	121
Ophthalmia neonatorum,	40	49	48	35	172
Anterior poliomyelitis,	2	1	1	4	8
Smallpox,	1	3	1	–	5
Trachoma,	1	2	1	4	8
Tetanus,	1	2	3	1	7
Malignant pustule,	1	–	–	–	1
Trichinosis,	–	1	–	–	1

Cases of Infectious Diseases not included in the Above Table.

[Cases not notifiable under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending —				
	July 5.	July 12.	July 19.	July 26.	Total.
Mumps,	2	–	–	3	5
Tonsillitis,	–	3	–	–	3
Malaria,	1	–	–	–	1
Pellagra,	–	–	1	–	1

RETURNS OF DEATHS.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Cities and Towns of more than 10,000 Population.

[Under the provisions of chapter 210, Acts of 1913.]

Week ending July 5, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tubercular Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	17[1] 22[2]	10[1] 11[2]	2[1] 2[2]	1[1] 1[2]	1[1] 2[2]	– –	1[1] 2[2]	1[1] 2[2]	1[1] 2[2]	– –
Worcester,	145,986	3	2	–	–	1	–	–	–	–	–
Fall River,	119,295	13	8	–	–	–	–	2	3	–	–
Lowell,	106,294	1	–	–	–	–	–	–	–	–	1
Cambridge,	104,839	3	2	–	–	–	–	–	–	–	1
New Bedford,	96,652	1	1	–	–	–	–	–	–	–	–
Lynn,	89,336	4	3	–	–	1	–	–	–	–	–
Springfield,	88,926	3	2	–	–	–	1	–	–	–	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	1	–	–	–	–	1	–	–	–	–
Holyoke,	57,730	4	1	–	1	1	–	1	–	–	–
Brockton,	56,878	–	–	–	–	–	–	–	–	–	–
Malden,	44,404	1	1	–	–	–	–	–	–	–	–
Haverhill,	44,115	2	1	1	–	–	–	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	1	–	1	–	–	–	–	–	–	–
Fitchburg,	37,826	1	1	–	–	–	–	–	–	–	–
Taunton,	34,259	–	–	–	–	–	–	–	–	–	–
Everett,	33,484	–	–	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	–	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	1	1	–	–	–	–	–	–	–	–
Waltham,	27,834	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	–	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	1	1	–	–	–	–	–	–	–	–
Beverly,	18,650	1	–	1	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	1	1	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	1	1	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	1	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	1	1	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	1	1	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,881,413	68	40	5	2	5	2	5	5	2	2

[1] Nonresidents deducted.   [2] Total deaths.

Week ending July 12, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tubercular Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	38[1] 43[2]	23[1] 26[2]	2[1] 2[2]	2[1] 2[2]	4[1] 4[2]	–	1[1] 1[2]	3[1] 3[2]	4[1] 4[2]	1[1] 1[2]
Worcester,	145,986	6	5	1	–	–	–	–	–	–	–
Fall River,	119,295	6	1	–	1	1	1	–	2	–	–
Lowell,	106,294	4	3	1	–	–	–	–	–	–	–
Cambridge,	104,839	6[3]	3	–	–	1	1	–	–	–	–
New Bedford,	96,652	7	6	1	–	–	–	–	–	–	–
Lynn,	89,336	2	1	–	–	–	–	–	–	1	–
Springfield,	88,926	3	2	1	–	–	–	–	–	–	–
Lawrence,	85,892	3	2	–	–	–	1	–	–	–	–
Somerville,	77,236	–	–	–	–	–	–	–	–	–	–
Holyoke,	57,730	2	1	–	–	1	–	–	–	–	–
Brockton,	56,878	2	2	–	–	–	–	–	–	–	–
Malden,	44,404	1	–	–	–	1	–	–	–	–	–
Haverhill,	44,115	4	4	–	–	–	–	–	–	–	–
Salem,	43,697	3	1	–	–	–	–	–	1	1	–
Newton,	39,806	1	1	–	–	–	–	–	–	–	–
Fitchburg,	37,826	–	–	–	–	–	–	–	–	–	–
Taunton,	34,259	2	–	–	1	–	–	–	1	–	–
Everett,	33,484	1	1	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	1	1	–	–	–	–	–	–	–	–
Pittsfield,	32,121	2	2	–	–	–	–	–	–	–	–
Waltham,	27,834	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	1	1	–	–	–	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	1	1	–	–	–	–	–	–	–	–
North Adams,	22,019	1	1	–	–	–	–	–	–	–	–
Northampton,	19,431	1	1	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	–	–	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	1	1	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	1	1	–	–	–	–	–	–	–	–
Clinton,	13,075	1	1	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	1	1	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,088,576	107	70	6	4	8	3	1	7	6	1

[1] Nonresidents deducted. [2] Total deaths. [3] One death from anterior poliomyelitis.

Week ending July 19, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tubercular Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	24[1]	16[1]	1[1]	1[1]	3[1]	–	–	1[1]	–	2[1]
		29[2]	18[2]	1[2]	1[2]	5[2]	–	–	1[2]	–	3[2]
Worcester,	145,986	9[3]	6	1	–	–	–	1	–	–	–
Fall River,	119,295	3	2	–	–	–	1	–	–	–	–
Lowell,	106,294	2	2	–	–	–	–	–	–	–	–
Cambridge,	104,839	5	4	–	–	–	–	–	–	1	–
New Bedford,	96,652	3	2	–	–	–	–	–	–	–	1
Lynn,	89,336	–	–	–	–	–	–	–	–	–	–
Springfield,	88,926	4	2	1	–	–	1	–	–	–	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	1	–	–	1	–	–	–	–	–	–
Holyoke,	57,730	1	–	–	1	–	–	–	–	–	–
Brockton,	56,878	1	1	–	–	–	–	–	–	–	–
Malden,	44,404	1	1	–	–	–	–	–	–	–	–
Haverhill,	44,115	2	1	–	1	–	–	–	–	–	–
Salem,	43,697	1	–	–	–	–	1	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	–	–	–	–	–	–	–	–	–	–
Taunton,	34,259	1	1	–	–	–	–	–	–	–	–
Everett,	33,484	2[3]	–	–	–	–	–	–	1	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	–	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	–	–	–	–	–	–	–	–	–	–
Waltham,	27,834	1	1	–	–	–	–	–	–	–	–
Brookline,	27,792	1	1	–	–	–	–	–	–	–	–
Chicopee,	25,401	2	2	–	–	–	–	–	–	–	–
Gloucester,	24,398	2	1	–	1	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	3	2	–	1	–	–	–	–	–	–
Northampton,	19,431	1	1	–	–	–	–	–	–	–	–
Beverly,	18,650	2	–	–	–	2	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	1[4]	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	–	–	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	–	–	–	–	1	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	1	–	–	–	–	–	1	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	1	1	–	–	–	–	–	–	–	–
Methuen,	11,448	1	–	–	–	–	–	–	1	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	1	1	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,984,177	83	50	3	6	7	4	2	3	1	4

[1] Nonresidents deducted.
[2] Total deaths.
[3] Including one death from tetanus.
[4] One death from chicken pox.

Week ending July 26, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tubercular Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	{24[1] 29[2]	14[1] 16[2]	1[1] 2[2]	1[1] 2[2]	2[1] 2[2]	1[1] 1[2]	– –	2[1] 3[2]	3[1] 3[2]	– –
Worcester,	145,986	5[3]	1	1	1	–	–	–	–	1	–
Fall River,	119,295	5	–	–	1	2	–	1	1	–	–
Lowell,	106,294	4	1	1	–	–	2	–	–	–	–
Cambridge,	104,839	4	2	1	1	–	–	–	–	–	–
New Bedford,	96,652	1	1	–	–	–	–	–	–	–	–
Lynn,	89,336	3	1	–	–	–	2	–	–	–	–
Springfield,	88,926	3	1	–	1	1	–	–	–	–	–
Lawrence,	85,892	4	2	1	–	–	–	–	–	1	–
Somerville,	77,236	1	–	–	–	1	–	–	–	–	–
Holyoke,	57,730	6	4	1	–	1	–	–	–	–	–
Brockton,	56,878	3	1	–	–	2	–	–	–	–	–
Malden,	44,404	2	1	–	–	1	–	–	–	–	–
Haverhill,	44,115	3	2	1	–	–	–	–	–	–	–
Salem,	43,697	1	–	–	1	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	1	1	–	–	–	–	–	–	–	–
Taunton,	34,259	1	–	–	1	–	–	–	–	–	–
Everett,	33,484	–	–	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	1	–	–	1	–	–	–	–	–	–
Pittsfield,	32,121	–	–	–	–	–	–	–	–	–	–
Waltham,	27,834	2	1	–	1	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	–	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	1	–	–	–	–	1	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	1	–	1	–	–	–	–	–	–	–
Northampton,	19,431	1	–	–	1	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	2	2	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	1	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	1	1	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	1	–	–	1	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,101,058	87	39	9	12	10	6	1	4	5	–

[1] Nonresidents deducted. [2] Total deaths. [3] One death from tetanus.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Towns of less than 10,000 Population.

[Under the provisions of chapter 210, Acts of 1913.]

DISEASE.	Place.	Week ending — July 5.	July 12.	July 19.	July 26.
Tuberculosis, pulmonary (or not classified),	Amesbury,	–	–	–	1
	Amherst,	1	–	–	–
	Blackstone,	1	–	–	–
	Bridgewater,	1	–	–	–
	Dudley,	–	–	–	1
	Medfield,	1	1	–	–
	Mendon,	1	–	–	–
	Saugus,	–	1	–	–
	Spencer,	2	–	–	–
	Stoneham,	–	–	1	1
	Swampscott,	–	–	1	–
	Wakefield,	–	–	–	1
	Ware,	–	1	–	–
	Wellesley,	1	–	–	–
	Weston,	1	–	–	–
	Winchester,	1	1	–	–
Total,		10	4	2	4
Tuberculous meningitis,	Dedham,	–	–	1	–
	Ludlow,	–	–	–	1
	Ware,	–	1	–	–
Total,		–	1	1	1
Tuberculosis, other forms,	Hadley,	–	1	–	–
	Lenox,	–	–	–	1
	Montague,	1	–	–	–
	Ware,	–	1	–	–
Total,		1	2	–	1
Diphtheria,	Groton,	–	–	1	–
Scarlet fever,	Amherst,	–	1	–	–
	Lenox,	–	–	–	2
	Palmer,	–	–	1	–
Total,		–	1	1	2
Typhoid fever,	Hubbardston,	–	–	–	1
	Monson,	–	1	–	–
	Saugus,	–	–	–	2
Total,		–	1	–	3

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Towns of less than 10,000 Population — *Concluded.*

DISEASE.	Place.	Week ending — July 5.	July 12.	July 19.	July 26.
Measles,	Groton,	–	–	1	–
	Lenox,	–	–	–	1
	Somerset,	1	–	–	–
	Westminster,	–	–	–	2
Total,		1	–	1	3
Malignant pustule,	No. Attleborough,	–	–	–	1

REPORT ON INSPECTION OF FOOD AND DRUGS.

Laboratory Examinations of Food and Drugs.

The following summary presents the results of the laboratory examinations during the month of July, 1913, of samples of food and drugs collected by inspectors of the Board: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Cider,	–	1	1	Jam,	1	–	1
Confectionery,	1	–	1	Lard,	1	–	1
Cream,	4	2	6	Milk,	502	408	910
Drugs,	62	10	72	Olive oil,	1	–	1
Eggs,	1	4	5	Pickles,	1	–	1
Flavoring extracts: —				Soda-water syrups,	4	2	6
Lemon,	8	5	13	Soft drinks,	36	–	36
Peppermint,	1	–	1	Table sauce,	3	–	3
Fruit juice: —				Total,	632	432	1,064
Grape juice,	1	–	1				
Grape fruit juice,	1	–	1				
Lime juice,	4	–	4				

The samples of drugs found to be adulterated were spirit of peppermint and tincture of iodine.

The cities and towns in which samples were collected were: Arlington, Bedford, Billerica, Boston, Braintree, Brookline, Carlisle, Chelsea, Concord, Dartmouth, Dedham, Everett, Foxborough, Gloucester, Haverhill, Hull, Lexington, Littleton, Lynn, Malden, Manchester, Medford, Medway, Middleborough, Millis, Natick, New Bedford, North Andover, Oak Bluffs, Quincy, Revere, Rockport, Saugus, Somerville, Walpole, Waltham, Wayland, Westford, Westminster, Wilmington, Woburn, Worcester.

Prosecutions for Violations of the Law relating to Food and Drugs.

Eleven convictions were secured during the month of July, 1913, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	William Higgins,	Saugus,	Milk (total solids, 12.40).[1]
2	Oscar Peterson,	Saugus,	Milk (total solids, 8.58).[1]
3	Edward Flynn,	Revere,	Milk (total solids, 10.70).[1, 2]
4	Edward Flynn,	Revere,	Milk (total solids, 10.80).[1, 2]
5	Michael J. Collins,	Randolph,	Milk (total solids, 12.04).[3]
6	Hersey C. Mooers,	Haverhill,	Milk (total solids, 8.84).[1, 2]
7	Robert F. Seabury,	Dartmouth,	Milk (total solids, 6.94).[1, 2]
8	David Lauzon,	New Bedford,	Milk (total solids, 10.80).[1]
9	Anthony Souza,	Dartmouth,	Milk (total solids, 9.76).[1]
10	Josephine Poplaski,	Haverhill,	Milk (total solids, 10.06).[1]
11	North Shore Ice Delivery Company,	Lynn,	Ice (condemned).

[1] Watered. [2] Appealed. [3] Skimmed.

Fines imposed, $335.

List of Adulterated or Improperly Labeled Foods, etc., for July, 1913.

The following shows the adulterated or improperly labeled foods during the month of July, 1913.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
414	"Collirio" (1-5 per cent. cocaine hydrochlorate).	Premiata Farmacia Lauricella, 273-275 Hanover Street, Boston.	A borax solution containing cocaine.
20630	Milk,	James F. Carey, Worcester, Mass.,	Total solids, 11.70 per cent.; fat, 2.70 per cent.; proteins, 3.34 per cent.; skimmed milk.
20634	Milk,	Harvey Bros., Worcester, Mass.,	Total solids, 11.28 per cent.; fat, 2.30 per cent.; proteins, 3.34 per cent.; skimmed milk.
q 11702	Milk,	William Higgins, North Saugus, Mass.,	Total solids, 12.40 per cent.; fat, 4.20 per cent.; contained added water.
q 11712			Total solids, 11.08 per cent.; fat, 2.90 per cent.; contained added water.
q 11713	Milk,	Oscar Peterson, North Saugus, Mass.,	Total solids, 8.58 per cent.; fat, 2.40 per cent.; contained added water.
q 11714			Total solids, 9.20 per cent.; fat, 2.60 per cent.; contained added water.
q 11715			Total solids, 8.96 per cent.; fat, 2.60 per cent.; contained added water.
q 11716			Total solids, 8.40 per cent.; fat, 2.40 per cent.; contained added water.
q 11717			Total solids, 8.86 per cent.; fat, 2.75 per cent.; contained added water.
20657	Milk,	Joseph Lewis, Dartmouth, Mass.,	Total solids, 11.80 per cent.; fat, 4.20 per cent.; contained added water.
2624-R	Milk,	Josephine Poplaski, Haverhill, Mass.,	Total solids, 10.06 per cent.; fat, 2.30 per cent.; contained added water.
2626-R			Total solids, 11.82 per cent.; fat, 4.20 per cent.; contained added water.
2628-R			Total solids, 10.88 per cent.; fat, 3.30 per cent.; contained added water.

List of Adulterated or Improperly Labeled Foods, etc., for July, 1913 — *Continued.*

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
20641	Milk,	Hersey C. Mooers, Haverhill, Mass.,	Total solids, 9.52 per cent.; fat, 3.10 per cent.; contained added water.
20642			Total solids, 9.66 per cent.; fat, 3.00 per cent.; contained added water.
20643			Total solids, 9.52 per cent.; fat, 2.70 per cent.; contained added water.
20644			Total solids, 8.84 per cent.; fat, 2.60 per cent.; contained added water.
20645			Total solids, 9.78 per cent.; fat, 3.00 per cent.; contained added water.
20692	Milk,	George E. Waldron, West Gloucester, Mass.,	Total solids, 11.26 per cent.; fat, 3.40 per cent.; contained added water.
20693			Total solids, 10.86 per cent.; fat, 3.30 per cent.; contained added water.
20694			Total solids, 10.80 per cent.; fat, 3.20 per cent.; contained added water.
20695			Total solids, 10.78 per cent.; fat, 3.40 per cent.; contained added water.
20696			Total solids, 10.80 per cent.; fat, 3.20 per cent.; contained added water.
20697			Total solids, 10.88 per cent.; fat, 3.30 per cent.; contained added water.
20698			Total solids, 10.84 per cent.; fat, 3.00 per cent.; contained added water.
20699			Total solids, 10.92 per cent.; fat, 3.15 per cent.; contained added water.
20711			Total solids, 11.10 per cent.; fat, 3.20 per cent.; contained added water.
20712			Total solids, 10.26 per cent.; fat, 2.80 per cent.; contained added water.
20713			Total solids, 10.34 per cent.; fat, 2.80 per cent.; contained added water.
20714			Total solids, 10.44 per cent.; fat, 2.90 per cent.; contained added water.
2880-R			Total solids, 11.22 per cent.; fat, 3.00 per cent.; contained added water.

2882–R			Total solids, 11.06 per cent.; fat, 3.10 per cent.; contained added water.
2884–R			Total solids, 11.18 per cent.; fat, 3.10 per cent.; contained added water.
2886–R			Total solids, 11.30 per cent.; fat, 3.10 per cent.; contained added water.
2888–R			Total solids, 11.30 per cent.; fat, 3.10 per cent.; contained added water.
2890–R			Total solids, 11.44 per cent.; fat, 3.20 per cent.; contained added water.
2892–R			Total solids, 11.36 per cent.; fat, 3.15 per cent.; contained added water.
2894–R			Total solids, 11.26 per cent.; fat, 3.05 per cent.; contained added water.
2896–R			Total solids, 11.20 per cent.; fat, 3.10 per cent.; contained added water.
2898–R			Total solids, 11.24 per cent.; fat, 3.00 per cent.; contained added water.
2652–R	Milk, ...	Joseph A. Atwater, East Gloucester, Mass., . .	Total solids, 10.70 per cent.; fat, 3.20 per cent.; contained added water.
2664–R			Total solids, 9.04 per cent.; fat, 2.60 per cent.; contained added water.
2666–R	Milk, . . .	Thos. E. Spittle, Gloucester, Mass., . .	Total solids, 8.88 per cent.; fat, 2.50 per cent.; contained added water.
2668–R			Total solids, 8.90 per cent.; fat, 2.50 per cent.; contained added water.
2696–R			Total solids, 9.76 per cent.; fat, 2.50 per cent.; contained added water.
2698–R			Total solids, 9.74 per cent.; fat, 3.00 per cent.; contained added water.
2700–R			Total solids, 10.16 per cent.; fat, 3.15 per cent.; contained added water.
2702–R	Milk, . . .	Anthony Souza, Dartmouth, Mass., . .	Total solids, 10.86 per cent.; fat, 3.50 per cent.; contained added water.
2704–R			Total solids, 10.60 per cent.; fat, 3.80 per cent.; contained added water.
2706–R			Total solids, 12.24 per cent.; fat, 4.20 per cent.; contained added water.
20782	Milk, ...	Peter Bolealadeto, New Bedford, Mass., . .	Total solids, 10.10 per cent.; fat, 2.70 per cent.; contained added water.
2758–R	Milk, ...	David Lauzon, Shawmut, Mass., . . .	Total solids, 10.80 per cent.; fat, 3.00 per cent.; contained added water.

LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR JULY, 1913 — *Concluded.*

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
20894	Milk,	A. A. Bellevue, Gloucester, Mass.,	Total solids, 10.83 per cent.; fat, 4.50 per cent.; contained added water.
3729-S	Milk,	Connolly & Cameron, Gloucester, Mass.,	Total solids, 10.16 per cent.; fat, 3.70 per cent.; contained added water.
q 11831	Milk,	Alfred H. Loring, Nantasket, Mass., Albert Loring, Nantasket, Mass.,	Total solids, 9.20 per cent.; fat, 3.00 per cent.; contained added water.
q 11832	Milk,		Total solids, 9.70 per cent.; fat, 3.00 per cent.; contained added water.
q 11834	Milk,		Total solids, 10.36 per cent.; fat, 3.20 per cent.; contained added water.
q 11835	Cream,		Fat, 28.80 per cent.; contained added water.
20827	Milk,	Robert F. Seabury, North Dartmouth, Mass.,	Total solids, 8.36 per cent.; fat, 2.40 per cent.; contained added water.
20828			Total solids, 8.00 per cent.; fat, 2.40 per cent.; contained added water.
20829			Total solids, 8.00 per cent.; fat, 2.40 per cent.; contained added water.
20830			Total solids, 8.10 per cent.; fat, 2.30 per cent.; contained added water.
20831			Total solids, 7.76 per cent.; fat, 2.20 per cent.; contained added water.
20832			Total solids, 6.94 per cent.; fat, 2.10 per cent.; contained added water.
20833			Total solids, 8.10 per cent.; fat, 2.45 per cent.; contained added water.
20834			Total solids, 8.20 per cent.; fat, 2.55 per cent.; contained added water.
20835			Total solids, 8.80 per cent.; fat, 2.50 per cent.; contained added water.
20836			Total solids, 7.20 per cent.; fat, 2.20 per cent.; contained added water.

20837			Total solids, 9.40 per cent.; fat, 2.70 per cent.; contained added water.
20838			Total solids, 9.30 per cent.; fat, 2.70 per cent.; contained added water.
20839			Total solids, 9.60 per cent.; fat, 2.70 per cent.; contained added water.
20840			Total solids, 10.90 per cent.; fat, 3.20 per cent.; contained added water.
3763–S	Milk,	Patrick Britt, East Lexington, Mass.,	Total solids, 11.08 per cent.; fat, 2.70 per cent; proteins, 2.92 per cent.; skimmed milk.
q 11866	Milk,	Myron J. Hirschi, Boulevard, Revere, Mass.	Total solids, 11.30 per cent.; fat, 2.90 per cent.; proteins, 3.10 per cent.; skimmed milk.
q 11869	Milk,	Fannie Arkin, Boulevard, Revere, Mass.,	Total solids, 10.18 per cent.; fat, 1.60 per cent.; proteins, 3.08 per cent.; skimmed milk.
q 11871	Milk,	Charles H. Brown, Boulevard, Revere, Mass.,	Total solids, 11.50 per cent.; fat, 2.60 per cent.; proteins, 3.15 per cent.; skimmed milk.
q 11876	Milk,	Howard H. Trask, Boulevard, Revere, Mass.,	Total solids, 10.90 per cent.; fat, 2.75 per cent.; proteins, 3.02 per cent.; skimmed milk.
q 11906	Milk,	George W. Burgess, Hingham Centre, Mass.,	Total solids, 11.08 per cent.; fat, 3.00 per cent.; contained added water.
q 11907	Milk,		Total solids, 10.94 per cent.; fat, 3.10 per cent.; contained added water.
q 11908	Skimmed milk,		Total solids, 8.24 per cent.; fat, 0.20 per cent.; contained added water.
q 11909	Cream,		Total solids, 34.46 per cent.; fat, 32.8 per cent.; contained added water.
3054–R	Milk,	Harris Rotman, Millis, Mass.,	Total solids, 12.12 per cent.; fat, 3.10 per cent.; proteins, 3.25 per cent.; skimmed milk.
3058–R			Total solids, 12.00 per cent.; fat, 3.00 per cent.; proteins, 3.25 per cent.; skimmed milk.
3060–R			Total solids, 11.98 per cent.; fat, 3.00 per cent.; proteins, 3.27 per cent.; skimmed milk.
q 11946	Milk,	John Rynn, Cochituate, Mass.,	Total solids, 11.56 per cent.; fat, 2.60 per cent.; proteins, 3.26 per cent.; skimmed milk.
3857–S	Milk,	Palmer Davis, Carlisle, Mass.,	Total solids, 12.46 per cent.; fat, 3.10 per cent.; proteins, 3.39 per cent.; skimmed milk.

QUARTERLY REPORT ON COLD STORAGE.

During the months of April, May and June, 1913, the 49 licensed cold-storage or refrigerating warehouses and licensed rooms therein of the State were examined several times by inspectors of the State Board of Health, and were found to be in good sanitary condition. At a few of the warehouses it was necessary to make suggestions for cleanliness and sanitation; most of these have been complied with and the remainder are now in the process of being carried out.

The inspectors condemned and confiscated a number of articles at the warehouses on account of decomposition; also, a large quantity of food fish that had been subjected to accidental high temperatures, rendering it unfit food, was immediately condemned. All of the condemned articles were disposed of as per summary below.

The following table shows the quantities of articles placed in cold storage during the three months preceding the first day of July, 1913; also, the quantities of butter and eggs held in cold storage on the first day of July, 1913, as follows: —

Articles placed in Cold Storage.

Articles.	Cases.	Dozens.	Packages.	Pounds.
Eggs, case,	661,617	19,848,510	–	–
Eggs, broken,	–	13	313	353,620
Butter,	–	–	192,206	11,809,262½
Poultry,	–	$2\frac{7}{12}$	8,903	1,447,127
Game,	–	$131\frac{5}{12}$	357	2,223
Meat, fresh,	1	–	8,701 [1]	3,480,389
Meat products, fresh (except in process of manufacture),	–	–	2,216	511,525½
Fish, fresh food,	–	–	3,264 [2]	5,566,075
Totals,	661,618	19,848,657	215,960	23,170,222

[1] Includes 1 barrel.

[2] Includes 2,837 barrels.

Butter and Eggs Held.

Articles.	Cases.	Dozens.	Packages.	Pounds.
Eggs, case, ...	643,222	19,296,660	–	–
Eggs, broken, . . .	–	87	288	9,488
Butter, ...	–	–	59,048	10,672,502½
Totals, ...	643,222	19,296,747	59,336	10,681,990½

Articles in Cold Storage condemned upon Physical Examination alone as Unfit for Food.

Date.	Article.	Weight (Pounds).	Disposition.
Apr. 26, 1913	Fowl, ...	24	Incinerated.
Apr. 28, 1913	Veal, ...	100	Rendered.
Apr. 30, 1913	Lambs fries, ...	16	Incinerated.
Apr. 30, 1913	Livers, ...	12	Incinerated.
Apr. 30, 1913	Ducks, ...	12	Incinerated.
Apr. 30, 1913	Lamb, ...	60	Incinerated.
Apr. 30, 1913	Fish, ...	150	Rendered.
Apr. 30, 1913	Partridge, ...	9	Incinerated.
Apr. 30, 1913	Bluefish, ...	7	Incinerated.
May 1, 1913	Goose, ...	5	Incinerated.
May 2, 1913	Guinea fowl, ...	62	Incinerated.
May 6, 1913	Livers, ...	6	Rendered.
May 10, 1913	Miscellaneous meat, ...	40	Rendered.
May 12, 1913	Sweetbreads, ...	6	Rendered.
May 17, 1913	Venison, ...	14	Rendered.
June 16, 1913	Squid (food), ...	65,000	Fertilizer.
	Total, ...	65,523	

REPORT ON INSPECTION OF DAIRIES.

During the month of July, 1913, 456 dairies were examined in the following places: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Ashburnham,	7	2	28.57	5	71.43
Second inspection,	2	–	–	2	100.00
Third inspection,	3	1	33.33	2	66.67
Ashby,	8	1	12.50	7	87.50
Second inspection,	12	6	50.00	6	50.00
Ayer,	–	–	–	–	–
Second inspection,	2	1	50.00	1	50.00
Third inspection,	2	1	50.00	1	50.00
Fourth inspection,	2	1	50.00	1	50.00
Billerica,	31	26	83.87	5	16.13
Second inspection,	1	1	100.00	–	–
Third inspection,	17	12	70.59	5	29.41
Boxborough,	9	7	77.78	2	22.22
Third inspection,	16	12	75.00	4	25.00
Chelmsford,	28	23	82.14	5	17.86
Third inspection,	23	17	73.91	6	26.09
Dracut,	30	22	73.33	8	26.67
Second inspection,	2	2	100.00	–	–
Third inspection,	18	15	83.33	3	16.67
Fourth inspection,	2	2	100.00	–	–
Groton,	–	–	–	–	–
Second inspection,	1	1	100.00	–	–
Harvard,	27	22	81.48	5	18.52
Second inspection,	9	7	77.78	2	22.22
Third inspection,	30	21	70.00	9	30.00
Littleton,	13	11	84.62	2	15.38
Second inspection,	3	2	66.67	1	33.33
Third inspection,	2	2	100.00	–	–
Fourth inspection,	39	32	82.05	7	17.95
Fifth inspection,	2	1	50.00	1	50.00
Northfield,	16	7	43.75	9	56.25
Second inspection,	10	8	80.00	2	20.00
Third inspection,	1	–	–	1	100.00
Tewksbury,	9	9	100.00	–	–
Second inspection,	1	1	100.00	–	–
Third inspection,	13	11	84.62	2	15.38
Warwick,	3	2	66.67	1	33.33
Wayland,	1	–	–	1	100.00
Westford,	19	17	89.47	2	10.53
Second inspection,	4	3	75.00	1	25.00
Third inspection,	21	16	76.19	5	23.81
Fourth inspection,	1	1	100.00	–	–
Winchendon,	7	5	71.43	2	28.57
Second inspection,	2	2	100.00	–	–
Third inspection,	7	7	100.00	–	–

Total number of dairies examined, ... 456
Number found to be free from objectionable conditions, ... 340
Number concerning which letters were sent, ... 116
Total number of conditions to which attention was called, ... 330
Percentage of dairies which passed inspection, ... 74.56

In addition to the above, 8 dairies were visited at which the sale of milk had been discontinued. Included in these were 2 producing butter.

Included in the total number of dairies visited were 208 which had recently started in the milk-producing business and were inspected for the first time.

The names of the owners of the dairies found to be worthy of commendation follow: —

Ashburnham.

Class A.

"Town Farm" ‡

Class B.

Aho, John
Luoma, William

Ashby.

Class B.

Brooks, I. H., & Sons * †
Farwell, Herbert A.* †
Green, Samuel * †
Hayward, A. I.* †
Lyman, J. P.
Symonds, F. P.* †
White, Howard A.* †

Ayer.

Class B.

Graves, Joseph ‡
Gray, Howard K.* †
Stone, Charles E.§ ||

Billerica.

Class A.

The Mitchell School (A. H. Mitchell, Propr.)
Parker, J. Nelson ‡ ||

Class B.

Backer, C. A.
Bailey, J. G.‡
Belknap, F. W.
Blood, L.
Bowman, C. A.‡
Bruorton, Geo. E.‡
Callahan, Daniel ‡
Cook, S. J.
Corkum, DeLacey ‡
Dodge, G. N.
Donovan, John
Downing, John H.*
Dunlop, Harry
Essex, H. W.‡
Farmer, Mary E.
Greenwood, G. P.‡
Harrison, R. S.
Hutchins, H. M.
Jones, N. R.
Kennelly, M. L.
Kitchen, Henry
Martin, V. O.
Maybury, O.‡ ||
McClosky, James
McDermott & Page
McElligott, (Est. of) Thomas ‡
Merriam & Moore
Moulton, C. W.
Nuttall, Charles E.
Pasho, Burton C.‡
Reardon, M.
Rogers, Alonzo D.
Sanford, B. O.
Simonds, George E.‡ ||
Tutein, C. D.
Welch, (Dr.) E. J.
Wright, J. H. & H. S.

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

Boxborough.

Class B.

Barteau, Ernest L.
Cobleigh, Alfred W.
Cobleigh, J. R.‡
Cobleigh, Nelson A.‡
Cunningham, P. W.‡ ||
Hayward, Warren ‡
Littlefield, Albert ‡
Maleen, (Mrs.) Anna
McNamara, Hugh ‡
Myers, Charles
Porter, (Mrs.) Emma
Priest, J. R.
Richardson, L. W.‡
Swenson, Carl A.‡
Waitt, Charles H.‡
Wetherbee, C. T.‡
Wetherbee, M. L.‡
Whitcomb, John H.‡
Withington, W. L.

Chelmsford.

Class B.

Allard, N.
Blaisdell, E. A.
Blodgett, F. F.‡
Blood, Edw. R.
Brown, Joseph H.‡ ||
Byam, Charles W.‡ ||
Chapman, O. J.
Chmalksae, K. H.
Dailey, James P.‡
Davis, A. H.
Ducharne, T. C.
Dupee, Wm. J.‡
Dutton, A. E.
Dutton, (Mrs.) Carrie A.
Eaton, John P.‡
Edwards, Wm. C.‡ ||
Eldridge, E. E.
Emerson, W. B.
Flynn, Patrick ‡
Gustafson, Morris
Hall, (Mrs.) Mary P.
Holden, W. S.
Lapham, E. B.
Lupien, U. J.
McLarney, James A.
Noel, J. B.‡
Oczowkoke, John
Paignon, E., Jr.‡
Parker, (Est. of) W. S. ‡
Parlee, Wm.‡
Phillips, J. B.‡
Pratt, D. M.
Putnam, F. E.
Sheehan, (Mrs.) Thomas ‡
"Town Farm" ‡
Tucker, W. C.‡
Vyskoczka, (Mrs.) Mary
Wright, Edward C.‡
Wright, Gilbert
Zabierek, S.

Dracut.

Class B.

Boulet, Joseph
Brox, K.‡
Bryant Brothers ‡ ||
Cameron, Daniel E.‡
Cluff, B. A.‡
Cluff, (Mrs.) E. E.
Coburn, Granville
Coburn, Henry G.§
Coburn, O. J.‡
Coburn, Seldon & Son ‡
Cook, Wm.
Davis, Charles F.
Donahue, P. H.
Fox, Albert ‡
Fox, C. W.
Fox, Harold
Fox, H. E.
Fox, J. C.
Fox, R. S.‡
Gaudette, Wm.*
Gougeon, Thos.
Hamblett, C. A.‡
Hamer, Henry
Heland, Geo. F.*
Kennedy, J. E.
Krlsh, John
Maille, J. A.‡
McNamara, (Mrs.) P. J.‡
Mills, Enoch ‡
Moseley, J. W.
Nichols, F. B. J.§
Ogonowski, Alex.
Parkey, David
Peabody, Henry F.‡
Smith, C. M.
Stewart, James
Thessell, A. J.
Udell, C. C.
Varnum, Joseph P.‡
Willett, T. B.
Wilson, F. C.‡

Groton.

Class A.

Blodgett, C. A. & F. R.*

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* Second inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

Harvard.

Class AA.

Warren, Fiske

Class A.

Cushman, Misses
Whitney, (Mrs.) S. W.‡

Class B.

Beard, (Mrs.) Rebecca J.
Bigelow, John R.‡
Brown, A. M.‡
Cleaves, John H.*
Coffey, Gilman
Coke, E. A.
Davis, Stowell W.‡
Desmond, Jeremiah
Dolphin, Martin, Jr.
Dudley, C. W.
Farnsworth, S. M.‡ †
Ford, Frank
Ford, Joseph
Gale, George G.‡
Green, Walter A.‡
Griffin, Michael E.*
Hall, L. W.‡
Haskell, Wm. B.‡
Jones, Frank ‡
Joyce, (Mrs.) Catherine *
Joyce, Fred A.‡
Keyes, C. D.*
Madigan, James ‡
Madigan, John H.‡
Maynard, J. E.‡
McMahon, M. F.
McNiff, Thomas ‡
Mead, Henry ‡
Nogler, George
O'Connor, (Mrs.) John *
Oleson, Hans
Parker, Norman
Philbrook, Frank D.‡
Priest, B. J.‡
Ryan, F. O.
St. John, Fred *
Schnare, C. E.
Sheehan, Daniel W.‡
Sprague, J. F.
"The Shakers" * †
"Town Farm" ‡
Turner, A. H.‡
Vaughn, H. H.
Warner, F. M.
Waters, Henry
Waters, Hugh
Wilde, G. F., Jr.

Littleton.

Class A.

Bradley, A. S.§ †
Fuller, J. L.
Kimball, Walter §

Class B.

Babcock, (Mrs.) Alice S.
Barrows, R. T.§
Blodgett, T. M.
Brown, Marshall § ||
Brown, W. G.§
Cash, Geo. H.§
Cooper, Henry J.‡
Coughlin Brothers *
Danahy, T.§
Dodge, J. F.
Flagg, Clifton E.§ ||
Flagg, C. V.§ ||
Gordon & Leland
Haley, Alfred §
Hall, David H.* †
Houghton, D. G.§
Jackson, C. E.§
Kimball, Austin T.§
Kimball, Chas. A.§ ||
Kimball, Fred S.§ †
Mannion, T. J.§ †
McEnnis, C. J.
McNamara, Murtaugh §
McNiff, Michael §
Mitchell, W. L.
Moore, Thomas M.§ ||
Murphy, John
Nixon, James E.§ ||
Pingree, John L.
Priest, Edwin
Proctor, Geo. H.§
Proctor, W. S.§
Prouty, Gardner ‡
Robinson, E. H.§
Stone, Geo. F.§ ||
Stone, Louis §
Titcomb, Walter H.§
Tobin, William S.§
Wesley, Edmund §
Whitcomb, J. H. D. ¶ ||
Whitcomb, N. H.§
Wilcox, David
Works, Henry F.§ ||
Yapp, Charles H.§
Yapp, George §

Northfield.

Class A.

Caldwell, F. B.* †
Hackett, W. H.* †

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.
¶ Fifth inspection.

Class B.

Aldrich, F. E.
Browning Brothers
Clapp, L. O.
Gilbert, C. L.
Holton, C. I.*
Holton, Frank B.*
Merriman, William W.
Pelech, Joseph
Preston, P. W.*
Randall, Clarence A.* †
Tenney, Charles S.* †
Tyler, F. L.
Ward, A. W.* †

TEWKSBURY.

Class AA.

Hood, C. I.‡ ||

Class A.

Cameron, Evan P.
Carson, R. F.
Nesmith, (Mrs.) Thos.
Osterman, Aaron ‡

Class B.

Anderson, Axel F.‡
Battles, Phil. M.‡ ||
Cole, Elmer D.
Davis, Samuel H.
Felker Brothers
Garland, Geo. F.‡
Garland, M. E.
Haynes, Frank E.‡
Johnson, John A.‡
King, Russell
Martin, John R.
McCausland, Robert * †
Parsons, C. W.‡
Rogers, David F.‡
Sullivan, Thos.‡
"Town Farm" ‡

WARWICK.

Class B.

Kirk, H. N.
Williams, C. A.

WESTFORD.

Class B.

Arnsburg, E. E.
Blaisdell, A. J.‡
Burbeck, John ‡
Burnham, A. H.‡
Coburn, Charles D.
Cownell, John H.‡
Day, Geo. H.‡
Day, Otis
Desmond, David ‡
Emerson, E. C.‡
Flagg, Elbert H. § †
Gates, L. F.
Gould, Horace E.‡
Gregg, B. L.‡
Haley, John * †
Hartford, Geo. H.‡
Hildreth, A. A.
Hildreth, (Miss) Ella F.
Howard, C. L.‡
Hunt, Wm.
Ingalls, Harry W.
Jackson, George O.*
Kimball, George A.‡
McDonald, (Mrs.) A.‡
McMaster, John ‡
Parker, C. W.
Prescott, Richard D.* †
Sargent, J. E.
Simpson, John T.
Sugrue Brothers
Sullivan, James P.
Sweetser, W. P.
"Town Farm" ‡
Whitney, Sarah F.
Wright, Frank C.‡ †
Wright, P. E.
Yarnold, Richard

WINCHENDON.

Class B.

Beaman, C. H.
Cooper, George W.* †
Cottage Hospital Farm
Drury, L. J.‡
Epps, C. Bertram * †
Foisy, F. J., & Co.
Gregory, John ‡
Johnson, Frank C.
Miller, (Est. of) J. Q. ‡
Morlock, C. H.‡
Morlock, F. E.
Morlock, W. E.‡ ||
"Town Farm" ‡
Vaine, Joseph ‡ ||

* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

THE MODE OF TRANSMISSION OF POLIOMYELITIS.[1]

By M. J. Rosenau, M.D., Department of Preventive Medicine and Hygiene, Harvard University Medical School, Boston.

From a practical point of view the mode of transmission is the most useful single factor in combating a disease. The health officer would prefer to know the precise mode or modes of transmission of any disease rather than its cause or pathologic anatomy or even its treatment. Hence a large amount of work has been done to determine how the virus of poliomyelitis leaves the body, how it enters its victim, and the route it takes from one person to the next. Despite all the thought and work that has been focused on this problem, the mode of transmission of poliomyelitis remains an open chapter, and although much light has been thrown on the subject, the present state of our knowledge does not permit of dogmatic, much less final, statements.

There are two avenues of approach to a problem of this sort; one, through epidemiologic field studies, and the other through laboratory research work. Both these trails have been blazed. Much of the epidemiologic work has given conflicting results, and much of the laboratory work has likewise been confusing. The evidence obtained from the field and that from the laboratory, however, do not have an equal standing before the court. The fallibility of epidemiologic evidence has long been recognized. Sanitarians who have had a long experience know full well that it has always been necessary to revise the chapter on the epidemiology of a disease as soon as its mode of transference is discovered. All those who have collected field data are fully aware of the pitfalls. Errors are unavoidable from the very nature of the circumstances; the personal equation and also the limitations of the investigator often warp or dwarf the important facts. In any event, the enormous mass of data collected by careful investigators in the field is perplexing and difficult to analyze. Even if the epidemiologist has the detective instinct of a Sherlock Holmes, and the statistical genius of a Karl Pearson, he may be wholly carried off the track by the missed cases, and by the carriers, or by an incomplete knowledge of unusual forms of the disease, or by unknown factors in its etiology. On the other hand, the exact observations from the laboratory often throw a flood of light on our field work, and when the two are correlated we have real and useful additions to our knowledge.

[1] Reprinted from the Journal of the American Medical Association, May 24, 1913, Vol. LX, pp. 1612–1615.

There are many theories to account for the spread of poliomyelitis. The chief ones may be summarized under four headings: (1) that it is a "contagious" disease, communicated directly from person to person through the secretions from the mouth and nose; (2) that it is an insect-borne disease; (3) that it is conveyed through dust; (4) that it is an alimentary infection, the virus being taken in with food and drink and absorbed from the digestive tube. There is evidence from the field and from the laboratory to support each one of these theories. These four theories, however, do not include all the views brought forward to explain the mode of transmission of infantile paralysis. For example, the hypothesis has been expressed that the disease is transmitted to man from lower animals, particularly domesticated animals, but there has been no convincing demonstration that the infection occurs naturally in any other animal than man.

In view of the uncertainty concerning the mode of transmission of poliomyelitis it is worth while to take stock of our knowledge of this subject. I have therefore briefly summarized the evidence pro and con.

That anterior poliomyelitis may be a contagious disease was first announced by Wickman of Sweden, whose epidemiologic investigations upon the subject are now classic. Wickman formulated a new symptomatology; his greatest contribution to the subject was, perhaps, the discovery that abortive cases of the disease occur. These mild and hitherto unrecognized clinical forms shed an entirely different light on the epidemiology. Wickman brought forward strong evidence in support of the view that the disease was transmitted directly from person to person, especially through the abortive or missed cases, as well as through suspected carriers.

The theory that infantile paralysis is a "contagious" disease was the first, and is the most natural, explanation to account for its spread. In many respects infantile paralysis resembles epidemic cerebrospinal meningitis, with which disease it is, in fact, sometimes confused. Flexner has emphasized the resemblance between the two infections, and has been an able and valiant champion of the view that the virus in both these diseases leaves the body in the secretions from the mouth and nose and enters the victim through the same channel. Corroboration of this view has come especially through the work of the Swedish investigators, Kling, Pettersson and Wernstedt, who claim to have demonstrated the virus in the secretions from the nose and throat, not only in cases during the acute stage, but also during various stages of convalescence, and even in healthy carriers. Furthermore, Osgood and Lucas demonstrated the virus in the mucous membrane of a monkey five and a half months after recovery from the experimental disease, and recently they recovered it from a

chronic carrier in man. Kling claims to have found the virus in the nasopharynx up to seven months in a few human cases. Finally, it is possible to infect monkeys simply by placing the virus on the uninjured mucous membrane of the nose and throat. The evidence, therefore, that we are dealing with an infection that leaves the body in the secretions from the nose and throat, and enters by the same channel, is strong, both from epidemiologic studies and from laboratory investigations. That this evidence, however, is not conclusive, may be gleaned by a little closer consideration of the facts.

It is important, first of all, to remember that we have no clear-cut criterion by which to judge what is and what is not anterior poliomyelitis. When the symptoms are characteristic and the lesions typical we are justified in making a definite diagnosis. In any critical case, however, further corroboration must be had by transferring the virus from monkey to monkey in order to demonstrate that we are, in fact, dealing with a communicable infection capable of reproducing itself. When we apply this criterion to some of the work that has been reported, to support the view that infantile paralysis is a "contagious" disease, we find the evidence not as strong as the conclusions of the experimenters would lead us to suspect. The mere fact that an animal has an acute paralytic affection, associated with perivascular infiltrations, degeneration of the neurons, and occasional hemorrhages into the cord, is not enough, in the present state of our knowledge, to justify us in labeling it poliomyelitis. The criterion in critical cases must be the power of the virus to reproduce itself and repeat the symptoms and lesions of the infection through succeeding generations.

There has been a long series of negative results in attempts to demonstrate the presence of the virus in the secretions from the mouth and nose. Strauss, Rosenau, Shepard and Amoss, Flexner, and also Anderson and others, have all reported failures in this regard. These negative results have a certain degree of positive significance, for if the usual means of transmission of the disease is through the secretions from the mouth and nose we should not have such great difficulty in demonstrating its presence in these secretions. Only Kling,[1] Pettersson and Wernstedt have found it comparatively easy to make this demonstration. These investigators believe that they have established the important fact that

[1] Kling found it comparatively easy to demonstrate the presence of the virus in the washings from the mucous membranes. Thus he found that 78 per cent. of the monkeys contracted the disease after inoculation with water in which the mucous membranes of poliomyelitis cadavers had been rinsed. The virus was also found almost constantly in the secretions from the nose and throat of acute poliomyelitis patients. These results are so much at variance with the results obtained by American investigators that the question has arisen whether we are dealing with the same virus in America as that found in Sweden, or whether the virus has marked differences in virulence, or whether there is some experimental error or, more likely, an incorrect interpretation of results.

carriers occur, and are several times more numerous than the frank and abortive cases of poliomyelitis combined. Yet Flexner, Clark and Frazer report only one positive result out of numerous trials. They succeeded in demonstrating the virus of poliomyelitis in the washings from the naso-pharynges of the parents of a child suffering with poliomyelitis. The parents, however, showed no symptoms of illness.

The virus of anterior poliomyelitis is widely diffused throughout the body. It has been found in greatest virulence and concentration in the spinal cord of infected persons and animals. The virus is also quite constantly present in the brain and other organs and tissues as, for instance, the mucous membrane of the nose and pharynx, the mesenteric glands, the axillary and inguinal lymph-nodes, and even in the blood and the cerebrospinal fluid. Recently the virus has been demonstrated in the mucosa of the intestinal tract, and finally in the feces. It is therefore no surprise that a virus with such a wide distribution and so generally diffused throughout the body may occasionally be found in the secretions from the nose and throat. These facts make us hesitate to conclude that infantile paralysis must be a contagious disease, simply because it has been demonstrated experimentally that the virus may be found occasionally in the secretions from the nose and throat; it would be just as logical to conclude that the disease in its spread resembles typhoid fever because the virus has been demonstrated in the mucous membrane of the digestive tube and has also been found in discharges from the intestines.

There are other difficulties which must be met before we can accept as a proved fact that infantile paralysis is a contagious disease. Careful and masterly epidemiologic investigations of poliomyelitis have been conducted by the Massachusetts State Board of Health extending over a period of five years. The results of these studies were summarized by Dr. Mark W. Richardson, who plainly brought out the fact that the disease, as observed in Massachusetts, does not have the earmarks of a contagious disease. The disease prevails in rural rather than under urban conditions. In fact, it shows little tendency to invade cities, and when it does enter the city it does not strike the crowded, congested portions of the city. In all other contagious diseases spread through the secretions from the mouth and nose, epidemic outbreaks have been observed in crowded sections of cities, in asylums, hospitals, jails, on shipboard, and similar places where the spread of infection by contact is favored. This is the case with scarlet fever, diphtheria, measles, mumps, whooping cough, influenza, common colds, pneumonia and finally cerebrospinal meningitis. Cases of infantile paralysis in all stages of the disease have been taken into the hospitals, orphan asylums, children's homes, reform-

atory schools and other institutions in the Commonwealth, but in no instance during the five years in which the disease has been studied has it ever spread under these circumstances.

The seasonal prevalence, furthermore, of infantile paralysis does not suggest the seasonal prevalence of the diseases spread by contact through secretions from the mouth and nose. Almost all such diseases, including cerebrospinal meningitis, occur more particularly during the cold months of the year, whereas the prevalence of infantile paralysis is more marked during the summer months.

The curve of seasonal prevalence of infantile paralysis corresponds more closely with that of typhoid and the diarrhœal diseases than it does with the group of infections spread through the secretions from the mouth and nose. Typhoid has its season of maximum prevalence during the warm weather. Water-borne epidemics are apt to occur in the colder months of the year, and milk outbreaks may take place at any time. "Normal," or residual typhoid is a warm-weather disease and corresponds in this regard with cholera, dysentery and the infantile diarrhœas and other intestinal infections. The only other group of diseases which prevail especially during the warm weather are those which are insect-borne. Yellow fever stops with the first frost. The most pernicious form of malaria (estivo-autumnal) extends into the autumn, but the autumn of tropical regions is warm, rainy and favorable to mosquito life. The season of maximum prevalence of the insect-borne diseases corresponds, of course, to the season of maximum prevalence of insect life, namely, the summer.

It has long been evident to the student of epidemiology that the group of "contagious" diseases spread through the secretions from the mouth and nose occur throughout the entire year, but prevail especially during the colder months. On the other hand, there are two groups of disease having their maximum seasonal prevalence during the warm weather, namely, the intestinal infections and the insect-borne diseases. Of these two groups of summer diseases the insect-borne group disappears almost to the vanishing point in temperate latitudes with wintry climates, whereas the intestinal diseases continue to smolder all winter long, with occasional exacerbations, and sometimes even with outbreaks of epidemic proportions. These are generalizations that may not be applicable to a specific case. When we study the seasonal prevalence of infantile paralysis in all parts of the world, however, we find a summer prevalence, sometimes extending into the fall, but dying down almost out of sight during the winter and spring. So far as we may judge, then, from the seasonal prevalence of this infection, it corresponds more closely with that of the insect-borne type than any other group of diseases.

If poliomyelitis is a contagious disease, then we must construct secondary theories to fit certain known facts in its distribution, seasonal prevalence and age predilection, — facts which are at variance with this theory. The bulk of the cases of poliomyelitis may be very mild, and only those cases, perhaps, are recognized that reach the threshold of clinical observation. A similar situation would be presented if we knew diphtheria only by the cases of postdiphtheritic paralysis. Each case of poliomyelitis, in accordance with the assumption that it is spread by contacts, would be surrounded by a number of healthy carriers, but serious epidemics do not occur because the infected persons are not very susceptible. Why epidemic outbreaks should occur in rural conditions and not in the congested parts of cities is, however, not explained by this assumption. The assumed barrier of resisting individuals apparently isolates the case, but, in fact, favors the spread of the infection. It seems to be a general rule that a region where the disease has been epidemic is spared further outbreaks later. This phenomenon may be explained by assuming that a large part of the population has become immunized by having had the disease in an attenuated and unrecognized form. It is further assumed that in rural districts there is not the same opportunity, perhaps, to acquire immunity, and when an epidemic occurs it is liable to run an exceptionally severe course. The loopholes in these conceptions are evident to students of the disease, but it is an interesting speculation that deserves careful consideration and further study.

That infantile paralysis may be an intestinal infection has not been given the consideration that it deserves. In addition to a suggestive seasonal prevalence there is the age incidence and gastro-intestinal symptoms which often usher in an attack; furthermore, we have the fact that monkeys may be infected by feeding, and the further important fact that the virus has been demonstrated in the intestinal mucosa, and even in the discharges from the bowels. No convincing outbreak of infantile paralysis has ever been associated with water, milk, meat or other article of diet. Furthermore, we would expect a somewhat different epidemiology if food were a medium in transmitting the virus. The inherent unreliability of epidemiologic data, especially of a disease such as infantile paralysis, has already been noted, and the possibility of the virus entering by the digestive tube should be borne in mind by investigators. It took a long time to learn that milk may convey scarlet fever and other infections, and that pork may be responsible for trichinosis.

There has long been a suspicion that man contracts infantile paralysis from the lower animals. Hill incriminates horses. Thus, colts in Minnesota have suffered with a disease clinically like poliomyelitis, and the hypothesis has been proposed that the virus is spread through the intes-

tinal discharges of horses, which, drying, fly about as dust. A number of other students have associated it in one way or another with horses. Joest has described in detail the lesions of a disease of horses known as *Bornasche's Krankheit,* which has a similarity to poliomyelitis. Langhorst considers a possible relationship with the dog and cites two cases, in one of which the patient was bitten by a dog; the other patient was licked by a dog, and at the same time had a few scratches on his hand. In both cases the diagnosis of rabies was not excluded. In fact, there are many striking resemblances between rabies and poliomyelitis. All laboratory investigators who have worked with these two diseases have been struck with this resemblance. Both diseases are acute paralytic affections. The virus in both diseases is found in its greatest concentration and virulence in the central nervous system, but is also widely diffused throughout the body. The virus of both infections is filtrable, and in both affections the brunt of the lesions falls on the neurons of the central nervous system. There are other similarities between the two diseases which should be borne in mind, especially when studying the possible relationship between poliomyelitis and dogs.

Many observations have been made in Massachusetts and elsewhere of paralytic diseases of domestic animals occurring about the same time as poliomyelitis in man. Such paralytic diseases are common among pigs and also chickens, as well as horses, dogs, cats, etc. P. Roemer reported a paralytic disease in guinea-pigs which occurred among animals in his laboratory. The guinea-pigs died of a paralysis which has some resemblance to infantile paralysis. The infection is transmissible from guinea-pig to guinea-pig by inoculation; the virus is found to be non-bacterial and filtrable; the incubation period is from nine to twelve days; the symptoms are flaccid paralysis, usually of the hind legs, with involvement of the bladder. Microscopically, there is also a resemblance in the lesions of these guinea-pigs and those of poliomyelitis in man and monkeys. Roemer, however, does not claim, and there is nothing to indicate, that this paralytic disease of guinea-pigs is identical with poliomyelitis. Neustaedter has recently noted a paralytic affection of guinea-pigs that were kept in a cage under some monkeys with experimental poliomyelitis. The evidence that any of these paralytic diseases were genuine instances of true infantile paralysis is far from convincing.

Animals suffer with many paralytic diseases, the etiology of a few of which are known, but most of which are pathologic puzzles. The mere fact that an animal has an acute paralytic infection, with perhaps suggestive lesions in the cord, is not sufficient basis for concluding that we are dealing with poliomyelitis. All attempts to transmit the virus of infantile paralysis to lower animals, except the monkey, have failed.

Theobald Smith, Flexner and others have made numerous attempts to carry on the paralytic diseases of pigs, chickens and other animals without success. Therefore, while it is fairly possible that some of the lower animals may suffer with poliomyelitis, perhaps in a clinically unrecognized form, and while it is possible that man may contract the infection from lower animals, the possibility is only an assumption and lacks evidence.

Another theory to account for the spread of infantile paralysis is that it is dust-borne. Hill's observations of dust and its relation to the disease in Minnesota have already been referred to. The Massachusetts State Board of Health, during the five years of its epidemiologic studies, also considered the possibility of dust as a medium of conveying the virus, without, however, discovering any particular relationship between dust and the disease. The most suggestive evidence comes from Neustaedter and Thro, who claim to have induced the disease in monkeys by inoculating them with the dust found in sick-rooms. If the virus leaves the body in any considerable amount in the secretions from the mouth and nose, it is quite conceivable that the dust of the sick-room may contain the virus, for we know that, under certain circumstances, it retains its viability for months. Poliomyelitis does not have the characteristics of a dust-borne disease, or even of an air-borne infection, and this hypothesis has therefore been given scant credence.

The possibility that poliomyelitis may be a wound infection has been kept in mind in the investigations made by the Massachusetts State Board of Health. No particular relationship between wounds and the disease has been made out. The resemblance between infantile paralysis and rabies has already been discussed, and the fact is plain that monkeys may be inoculated through wounds; in fact, it is possible to cause the disease in the monkeys in the greatest possible variety of ways.

Some of the reasons for considering poliomyelitis an insect-borne disease have been published in some detail in another publication, and need not now be recounted. The epidemiologic evidence collected by Brues and Shepard, and summarized by Richardson, pointed toward the stable-fly, *Stomoxys calcitrans*. The successful experiments of Rosenau and Brues, soon corroborated by Anderson and Frost, incriminate the stable-fly as a factor in the transfer of the virus. The seasonal prevalence, the rural distribution and other facts concerning the disease are explained on this theory. On the other hand, the experimental facts lack further corroboration, and, moreover, these facts have not been translated from monkey to man, and we are not justified in doing so until further studies, which are now being made, are available. Schuberg and Kuhn have recently demonstrated that a number and variety of infections may be

transmitted by means of the stable-fly. In their experimental work they obtained positive results with relapsing fever, anthrax, southwest African horse sickness (*Pferdesterbe*) and epithelioma of fowls (*Hühnepocken*).

Howard and Clark conducted a series of experiments on insect transmission with the virus of poliomyelitis, at the Rockefeller Institute, with very interesting results. It was found that the domestic fly, *Musca domestica,* can carry the virus of poliomyelitis in an active state for several days on the surface of the body, and for several hours within the gastro-intestinal tract. These experiments were made by permitting the flies to feed on the virus, then killing the insects, grinding up their bodies, filtering, and injecting the filtrate into monkeys. Howard and Clark found that mosquitoes (*Culex pipiens, C. sollicitans* and *C. cantator*) did not take up and maintain in a living state the virus from the spinal cords of monkeys. Negative results were also obtained with lice (*Pediculus capitis* and *P. vestimenti*). The experiments with lice were designed to simulate natural conditions, but it was found that these insects did not take the virus of the blood of monkeys or maintain it in a living state. The bedbug (*Cimex lectularius*), however, gave positive results in that it was found in one experiment to have taken the virus with the blood from infected monkeys and maintained it in a living state within the body for a period of seven days. When we consider that the virus exists in the blood of monkeys in a very dilute state, for it requires a number of cubic centimeters of blood to infect another monkey, we are almost driven to the conclusion that the virus must have become concentrated (grown?) in the body of the bedbug. The results of Howard and Clark may therefore assume an enlarged significance.

If infantile paralysis is transmitted in nature largely or mainly through the agency of the stable-fly, this fact would render the suppression of the disease comparatively easy, whereas if the infection is spread largely from person to person through the intervention of carriers and missed cases, the difficulties of the problem will be multiplied manyfold. In the case of cerebrospinal fever it has been shown that carriers are ten times as numerous as the cases; if the conditions are analogous in infantile paralysis, the suppression of the disease will probably have to wait on specific therapy, of either preventive or curative nature.

The health officer impatiently asks: "Is poliomyelitis a contagious disease?" "Is it an insect-borne disease?" "Is it dust-borne?" "Is it contracted from lower animals?" "Is it an alimentary infection?" or "Is it possibly, like typhoid fever, spread by several or all of these various methods of conveyance?" In the present state of our knowledge a definite answer cannot be made to these important queries, and we must await further work before the health officer can direct his measures to

combat infantile paralysis with any assurance of success. Meanwhile the public must be given the benefit of the doubt, and the infection fought along all probable lines.

ICE AT FLAX POND, LYNN: DECREE OF THE SUPREME COURT OF MASSACHUSETTS.

On July 11, 1913, the State Board of Health made the following order: —

An Order relative to the Sale of Ice taken from Flax Pond in the City of Lynn.

At a meeting of the State Board of Health held on the fifth day of June, 1913, upon complaint in writing of not less than twenty-five consumers of ice cut from Flax Pond in the city of Lynn and sold or held for sale, alleging that said ice is impure and injurious to health, after notice to the parties interested of the time appointed for the hearing and after hearing said parties it is the judgment of said Board that the public health requires that the State Board of Health, acting under Revised Laws, chapter 75, section 59, make the following order, which is hereby made: —

Ice cut from Flax Pond in the city of Lynn during the winter of 1912–13 shall not be sold or held for sale for domestic purposes. It may, however, be used for cooling where it will not come in contact with food or drinking water.

Soon after this order was made the Board's inspectors visited Lynn and found that Flax Pond ice was being sold for domestic purposes. The evidence collected by the inspectors was placed before the Supreme Court and the following decree obtained: —

THE COMMONWEALTH OF MASSACHUSETTS.

Suffolk, ss. Supreme Judicial Court.
In Equity.

State Board of Health of the Commonwealth of Massachusetts,
v.
North Shore Ice Delivery Company of Lynn, in the County of Essex and said Commonwealth.

Final Decree.

And this case came on to be heard upon the bill and answer, and after hearing the parties and their evidence, the respondent is enjoined, ordered and commanded to obey and observe the terms of the order of the State

Board of Health, dated June 11, 1913, and to that end the respondent is strictly enjoined, ordered and commanded not to place or put any ice cut from Flax Pond during the winter of 1912–13, in or upon any wagon of the respondent engaged in delivering ice to the retail trade, so called, or consumers of ice for domestic purposes; and that the wagons of said respondent delivering said Flax Pond ice to wholesale trade shall make no deliveries to said retail trade, so called, or consumers of ice for domestic purposes.

And it is further *ordered, adjudged* and *decreed* that the respondent pay to the complainants the cost of this action, taxed by the clerk at $26.58, and that execution issue therefor in the usual form.

By the court,

John H. Flynn,
Assistant Clerk.

July 25, 1913.

A true copy. Attest:

(Signed) John F. Crowin,
Clerk.

A STUDY OF THE HYGIENIC CONDITION OF THE AIR IN TEXTILE MILLS WITH REFERENCE TO THE INFLUENCE OF ARTIFICIAL HUMIDIFICATION.

Although the relation of the humidity of the air to the health of textile employees has received comparatively little attention in this country, it has been under investigation by the English government for over twenty years, and the amount of moisture artificially introduced into weave sheds has been under government control in England since 1889, and rules regulating both temperature and humidity in cotton-weave rooms have been in operation since 1898.[1]

Previous to the laws enacted in the State of Massachusetts during the years 1908 and 1910, no State Legislature in the United States had passed laws relative to the purity and use of water for humidifying purposes in factories and workshops and to the regulation of the humidity and temperature of the atmosphere in textile factories. In the year 1908 the Massachusetts Legislature provided that the water used for humidifying purposes in any factory or workshop should be of such a degree of purity as not to give rise to any impure or foul odors, and should be so

[1] Reports, Departmental Committee on Humidity and Ventilation of Weaving Sheds, London, 1909, 1911.

used as not to be injurious to the health of persons employed in such factories or workshops. In 1910 the Legislature of Massachusetts enacted a law relative to the regulation of the humidity and temperature of the atmosphere in textile factories.[1] This law, while following the English regulations quite closely with reference to the permissible limits of humidity and temperature in the spinning and weaving departments of all textile factories, was essentially framed as the result of investigations and studies carried on in the State by the medical officers of health under the supervision of the State Board of Health. It was therefore intended for the sole purpose of meeting the Massachusetts conditions.

The especial characteristics of the Massachusetts law were that manufacturers might use any kind of standardized instruments which met with the approval of the State Board of Health, and that the manner of using the same should be approved by the State Medical Officer of Health in whose health district the factory was situated. In two respects, therefore, the law was unique, for it left it with the State Board of Health to standardize the instrument or to adopt for such standard one already standardized by the United States government, and it left the manner of using the instrument from time to time, or from day to day, to the discretion of the medical officers of health whose work is supervised by the State Board of Health.

Immediately following the enactment of the law of 1910, the Board made studies under the direction of Mr. H. W. Clark, chemist to the Board, to ascertain the relative accuracy of various types of instruments used for measuring humidity and to determine the condition of the air in typical mills where artificial humidification was employed. These studies were made by the staff of the Lawrence Experiment Station under Mr. Clark's supervision. It is with the studies of the air in the mills in its relation to the health of persons employed that the present paper has to deal.

Influence of the Condition of the Air upon Health and Comfort.

While the varying composition of the mixture of gases and impurities called air has been known for years, and the effect of many of the components and impurities upon the human organism determined, it is only within a comparatively short time that emphasis has been especially laid upon the influence which the condition of the air exerts on the general health, comfort and energy of individuals and communities. Pure air is a mixture of about four parts nitrogen and one part oxygen. Pure air, however, is practically unknown, and the air which surrounds us always

[1] Chapter 458, Acts of 1910.

contains certain amounts of water vapor, of other gases, and of finely divided particles of organic and mineral matter together with greater or less numbers of living organisms, all of which may affect in one way or another the health or comfort of the individual. The human body is so constituted that it readily adapts itself to considerable fluctuations in the proportion of oxygen and nitrogen of the air, and it has been amply proved that the amounts of carbon dioxide which are at all likely to be present in mill air are without any appreciable effect. Carbon monoxide, which is an active poison, may occasionally be present in the air of mills in which gas is used for fuel or lighting. Other gases, such as methane, hydrogen, etc., which because of their explosive properties when mixed with air are of extreme importance in the question of the air in mines, etc., and chemical fumes and vapors which may affect the health of employees in certain industries, apparently have no place in the present problem.

The physical condition of the air, however, is a much more important factor, the circulation of the blood, the assimilation of food, and practically every other function of the body being directly or indirectly affected by the temperature and humidity. The body is constantly producing heat which must be expended in energy or in the evaporation of moisture, or which must be lost by radiation. The performance of the body functions and the health of the individual are completely dependent on the elimination of this body heat. The body will perform its functions for a time even when surrounded by air which is considerably above the body temperature if the humidity is not too great, the excess body heat being eliminated by the evaporation of the profuse perspiration which is usually induced under such conditions. On the other hand, if the temperature of the air be lower than that of the body the excess body heat will be lost by radiation, even although the air be saturated with moisture. If the temperature of the air rises above that of the body, however, and the air is saturated with moisture, there is no way for the excess body heat to escape and fever follows with all its accompanying derangements of the body functions. Persons employed indoors, and especially those whose occupations are more or less sedentary, are particularly susceptible to the physical condition of the air.

In a cool, bracing atmosphere with relatively low humidity all the body functions are more active, breathing is deeper and more frequent, the circulation of the blood is increased, the digestion of food is stimulated, and more and a greater variety of food is consumed, with the result that the various ingredients necessary for the upbuilding of the body cells are not only more numerous but are better assimilated. In a hot, moist atmosphere, however, the conditions are reversed, the blood is

brought to the surface of the body, and the brain and organs of digestion and absorption are depleted, and not only are mental and physical activities reduced but the general resistance of the body to disease is lowered. The feeling of depression felt in badly ventilated rooms is largely caused, not by excess of carbonic acid or depletion of the air of its oxygen, or by toxic substances emanating from the occupants, but from the fact that the temperature and humidity have increased and normal evaporation from the skin has been reduced, thereby affecting the temperature-regulating mechanism of the body and the entire nervous and circulatory systems. According to Haldane[1] and others it is the sensible temperature, or that indicated by the wet bulb thermometer, which the body feels, and the actual or dry bulb temperature and the relative humidity are of minor importance under ordinary air conditions. With a wet bulb temperature above 88° F. in still air, heat stroke is likely to occur even with persons wearing little or no clothing and doing no work, while in the case of persons dressed in ordinary clothing and doing muscular work serious effects may follow at very much lower sensible temperatures. On the other hand, eminent physicians assert that excessively dry air is harmful, causing irritation and thickening of the mucous membranes and aggravation of catarrhal conditions. As to what degree of humidity is most conducive to the comfort of indoor workers is an open question, and undoubtedly depends somewhat upon the nature of the employment.[2] There is little question, however, that the comfort, and probably the health, of persons employed in the majority of textile processes is affected to a greater or less extent as the wet bulb temperature of the air increases above 70° to 75° F.

Ordinary air always contains a greater or less amount of both dead and living matters in suspension which may have an important influence upon the health. The dead matter or dust, consisting of particles of mineral matter from the streets and pavements and from vehicles and machinery, and of dead organic matter from the floors and walls, from clothing and from the emanations of men and animals, especially when present in excessive amounts, irritates the mucous membrane of the lungs and respiratory passages and renders them more susceptible to invasion by the germs of disease. The living matter consists of bacteria, yeasts and molds which are always present in greater or less numbers, and which have found their way into the air attached to dust particles, or have been projected directly into the air from the body by the acts of

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[1] Haldane, Report Departmental Committee on Humidity, etc., 1909, Appendix III.

[2] A detailed discussion of the physiological effects of temperature and humidity will be found in papers by Leonard Hill, Jour. San. Inst., June, 1911, and Pop. Science Monthly, October, 1912, and in papers read before the Fifteenth International Congress on Hygiene by Lee (this Journal, November, 1912) and Kimball, Winslow & Henderson (Eng. News, Nov. 28, 1912).

coughing and sneezing. So far as is known the yeasts and molds have little pathological significance, but it is well recognized that the germs of tuberculosis, pneumonia, influenza and perhaps other diseases are frequently transmitted through the air.

Respiratory Diseases in Textile Cities.

Studies of the textile industries in foreign countries have led to the belief that persons employed in them are exposed to conditions and influences which would warrant the classification of these industries among those which are detrimental to health. If the health of textile operatives is unfavorably influenced by the nature of their employment, or by characteristics or personal habits which are peculiar to them as a class, we should expect this effect to show in the vital statistics of those cities in which a considerable proportion of the population are thus employed.

The four great textile cities in Massachusetts are Fall River, Lowell, New Bedford and Lawrence, with an aggregate population of over 400,000 people. In these cities the manufacture of textile goods is practically the only industry of importance, and in the various branches of this industry the great majority of the employed population of these cities is engaged. The returns of deaths from various causes in Massachusetts cities have been published annually in the reports of the State Board of Health since 1894. Comparing the returns of deaths from these four textile cities with those of the whole State during these seventeen years, we find that the combined death rate from pneumonia and bronchitis was higher than that of the State in twelve of the seventeen years in New Bedford, in fourteen of the seventeen years in Lawrence, in fifteen of the seventeen years in Fall River and in each of the seventeen years in Lowell. Furthermore, the death rate from consumption was higher than that of the State in fourteen of the seventeen years in Lowell, in nine of the seventeen years in Lawrence, and in eight of the seventeen in New Bedford, and only in Fall River was the death rate from this cause lower than that of the entire State during a majority of the time since the records have been published.

In Table I. are shown the average yearly death rates from respiratory diseases in each of these textile cities, in 3 cities in which the majority of employed persons are engaged in the manufacture of shoes, and in 11 other cities in which the industries are diversified or which are more residential in character, during the three five-year periods between 1896 and 1910. The average death rate from tuberculosis during these fifteen years was higher in Lowell than in 12, and higher in Lawrence, Fall

River and New Bedford than in 9 of these other 14 cities, and the average for the 4 textile cities is about 11 per cent. higher than that of the 3 shoe cities, and about 7 per cent. higher than that of the 11 other cities in the list. The difference in the combined death rates from pneumonia and bronchitis in these various cities is even more marked. The mean death rate from these two causes was higher in Lowell and Fall River than in any of the other cities in the table, and the mean death rate in Lawrence and New Bedford was higher than in 13 of these 14 cities. Taking these cities in groups, the mean combined death rate from these two causes in the 4 textile cities during the fifteen years is more than 20 per cent. higher than that of the whole State, more than 60 per cent. higher than that of the 3 shoe cities, and nearly 30 per cent. higher than that of the 11 cities having diversified industries.

During the past few years there has been a strong campaign for the prevention of tuberculosis throughout the country, and the effect of this is to be observed in the average death rates for the three five-year periods for all the cities shown in the table. It is to be noted, however, that the reduction in consumption during recent years has been much less in the 4 textile cities than in the other groups of cities or in the State in general.

TABLE I.—*Average Death Rates from Respiratory Diseases in Certain Massachusetts Cities by Five-year Periods.*

Textile Cities.

Cities.	Population, 1910.	Average Yearly Deaths per 100,000.					
		Tuberculosis.			Pneumonia and Bronchitis.		
		1896–1900.	1901–05.	1906–10.	1896–1900.	1901–05.	1906–10.
Fall River,	119,295	161	172	151	264	283	271
Lowell,	106,294	214	164	154	288	280	290
New Bedford,	96,652	163	178	139	240	269	263
Lawrence,	85,892	139	176	166	228	265	262

Shoe Cities.

Cities.	Population, 1910.	Tuberculosis 1896–1900.	Tuberculosis 1901–05.	Tuberculosis 1906–10.	Pneumonia and Bronchitis 1896–1900.	Pneumonia and Bronchitis 1901–05.	Pneumonia and Bronchitis 1906–10.
Lynn,	89,336	142	122	117	159	180	181
Brockton,	56,878	183	161	99	124	105	120
Haverhill,	44,115	199	173	140	205	199	209

Table I. — *Average Death Rates from Respiratory Diseases, etc.* — Concluded.

Cities with Diversified Industries.

Cities.	Population, 1910.	Average Yearly Deaths per 100,000. Tuberculosis. 1896–1900.	Tuberculosis. 1901–05.	Tuberculosis. 1906–10.	Pneumonia and Bronchitis. 1896–1900.	Pneumonia and Bronchitis. 1901–05.	Pneumonia and Bronchitis. 1906–10.
Worcester,	145,986	215	177	130	235	241	201
Cambridge,	104,839	216	189	153	223	217	206
Springfield,	88,926	181	145	102	200	162	185
Holyoke,	57,730	161	180	146	175	227	233
Fitchburg,	37,826	139	107	92	156	181	189
Taunton,	34,259	224	219	168	235	261	299
Pittsfield,	32,121	137	160	134	212	227	215
Waltham,	27,834	194	161	114	167	189	206
Chicopee,	25,401	174	127	117	230	209	255
North Adams,	22,019	132	136	109	195	164	186
Northampton,	19,431	192	143	129	192	138	180
Averages.							
Four textile cities,	408,133[1]	169	172	152	255	276	272
Three shoe cities,	190,329[1]	175	152	116	163	161	170
Eleven other cities,	596,372[1]	179	159	126	202	207	214
Massachusetts,	3,366,416[1]	189	164	140	229	210	220

[1] Total population.

Factors influencing the Health of Textile Operatives.

From these statistics it is apparent that respiratory diseases are more prevalent in the cities of Massachusetts where the majority of wage earners are employed in textile manufacturing plants than is the case in cities whose inhabitants find employments in other or in more diversified industries. We should, however, know something of the various factors which contribute to these results, in order to determine to what extent occupation rather than other factors are responsible. The various cities included in the tabulation were selected with the purpose of eliminating certain of these factors. Each of the textile cities is matched by one or more of the other cities in size and general character of population, in geographical location and in general climatic conditions, and in all of these cities sanitation is on practically the same plane. These factors, then, while undoubtedly of a certain importance in individual instances,

may be eliminated in a consideration of the question as a whole. Other factors which enter into the question are the personal characteristics and habits of the persons employed in the industry, and the environment in which they perform their daily tasks. With reference to the physique of textile employees, the 1904 report of the Massachusetts State Board of Health states: —

It is, however, a fact which must not be slighted, that these industries are among the few that are open to persons of weak constitution and poor development. The work in the picking room, carding room, spinning room and weaving room is not of a kind that appeals to most vigorous men who can do better, financially and otherwise, in other lines of usefulness.

Personal habits, also, may and probably do enter into the question. Attention was called to this factor as long ago as 1895 by the late Sir Benjamin Dobson. In his book on "Humidity in Cotton Spinning" he says: —

I would suggest from my own knowledge that, beyond the question of the condition of the air in the mill, there is the question of the habits of the workpeople themselves; and I cannot help thinking that the mortality from these diseases might be much decreased if reasonably wholesome precautions were taken against chill by the workpeople themselves. But, as in every trade where there is personal danger, familiarity breeds contempt; and it is nothing uncommon to find workpeople coming from the hot mill to their homes for their meals, and after work is done for the day, when the outside atmosphere is at the extreme from the inside of the mill, with perhaps their shirt wet with perspiration and their chest open to the wintry breeze or the chilling fog. This may be done for a certain number of times with impunity; but the time will inevitably arrive when the borderline of immunity is passed, and the accumulated weakness created by previous occurrences is the cause of a grave malady which may or may not be fatal, but even if not fatal, will make a serious breach in the general health of the sufferer. . . . The female operatives are, perhaps, as daring in their defiance of the ordinary operations of natural laws; and it is no uncommon sight to see them trooping home in the cold of the winter evening with their mill clothing saturated with perspiration, and their only additional covering a shawl over the head and shoulders, which, although decent and picturesque, is a very inadequate protection against the extreme change of temperature. . . . In addition to this there is the ordinary spectacle in every mill yard, where, at intervals, men, women and children may be seen leaving the warm, dry, comfortable mill temperature . . . with clothing hot and damp from the heat and perspiration, and cross to the water tap or for other purposes. Add to this bare feet, and I think you have some conditions, at any rate, that will explain the abnormal mortality from the particular class of disease I have mentioned.

This description of habits is as pertinent to Massachusetts mill operatives to-day as it was to English conditions at the time it was written. While the barefooted workpeople do not have to "cross the yard to the water tap or for other purposes" in the modern mill, to see a considerable number of male operatives, clad only in overalls and undershirt, enjoying a noonday smoke outside the mill gates, or a group of female operatives not much more warmly clad assembled at the wide-open windows, even in the coldest and most inclement weather, is an occurrence so common as to excite no comment in any textile city. Combined with "weak constitution and inferior development" this is undoubtedly an important factor in the causation of consumption, pneumonia and bronchitis. This habit of carelessness to exposure, however, is not peculiar to textile operatives and is to be observed to a greater or less degree in the workers in many other industries. Furthermore, the danger from carelessness of this sort can be reduced only by education of the people themselves, and cannot be controlled by legislation or by activity of the sanitary authorities.

Other factors instrumental in the cause of these diseases, and ones which are or may be controlled to a greater or less extent by legal measures, are those which pertain to the various manufacturing processes. The different textile processes and the conditions common to them, together with their relation to the health of employees, were discussed in detail in the report made by the Massachusetts State Board of Health in 1906. Following are abstracts from that report which fully illustrate the importance of these factors: —

It has long been known that work which involves constant confinement in a dusty atmosphere predisposes to the development of diseases of the lungs, especially of pulmonary consumption. . . . Aside from dirt and other impurities which may be in the stock, it is the opinion of recognized medical authorities that vegetable dusts are markedly inimical to health. Those operatives in cotton mills who are peculiarly sensitive to unhygienic influences may become seriously affected through the constant irritation of cotton dust or "fly" in the upper air passages, giving rise first to dryness of the throat and later to cough and expectoration. Flax dust is thought to be even more irritating than cotton, while dust in the woolen and silk mills (animal origin) is considered to be somewhat less harmful in its effects. . . . We have to bear in mind, also, in considering the dust problem, the possibility of the presence of "infectious dust" from dried sputum in the air of different mill rooms. Persons suffering from consumption cannot always be detected in these rooms, and the habit of indiscriminate spitting involves the possibility of infection. . . .

There are many departments in which processes are conducted which ex-

pose the employees to dust; but the weaving, spinning, carding and waste rooms illustrate the important unhygienic conditions commonly associated with this disturbing element. In some weave rooms the air is so filled with dust as to present a hazy or "smoky" appearance. . . . Dust in spinning rooms is more constant and is greater in amount than in weave rooms. . . . In a coarse-goods mill, where waste stock is used in a low-studded and generally neglected room, the amount, constancy and character of the dust is such as to suggest the probability of real danger. The principal features of the card room are the amount of dust and lack of proper ventilation and effective means of removing the dust. . . . The quantity of dust is commonly sufficient to cause a distinct cloudiness of the atmosphere, which, in a room lacking proper ventilation, is a serious menace to the health of the operatives. In the assorting or waste room, "sweepings" are picked over and the different grades separated. Here may be found numerous kinds of waste and dirt, including that which comes from the floors of the card and spinning rooms, and, of most importance, sputum in large quantities, which may contain the exciting causes of infective diseases of the respiratory tract. . . .

In both weaving and spinning departments there are a number of other unsanitary influences which may affect the health of the workers, the effects of any one of which are not susceptible of correct measurement. . . . There is commonly an excess of moisture with unnecessary heat in weave rooms, and excessive heat with frequently undue moisture in spinning rooms. . . . Scarcely any effort is made on the part of most manufacturers to ascertain the definite conditions with respect to heat and moisture favorable to weaving. . . . The raising of humidity is done in a very unworkmanlike manner. . . . That heavy or excessive steaming in mills is injurious to the health of those who work in them has been for years the opinion of competent physicians. . . . Poor light is also a factor of no mean consequence in reducing the physiological resistance to disease. . . . It is impossible to ignore the probability that many individuals working in dirty, unpainted, overheated rooms, with impure air and excessive moisture, use up a great deal of nervous energy and suffer from eye fatigue or eye strain and its consequences. . . .

A room with poor light, unnecessary high temperature, dust, and an excess of moisture, is not, from a sanitary point of view, a desirable room to work in. . . . Add to these unhygienic influences two prominent factors which enter into health conditions, want of cleanliness and lack of provision for a plentiful supply of fresh air, and a class of rooms is represented which is conspicuously common among the weave and spinning mills in this State.

Reasons for Artificial Humidification.

It is now quite generally appreciated by mill managers that the humidity of the air is an important factor in the manufacture of textile fabrics. The former supremacy of certain English localities as textile centers was due to the naturally favorable climatic conditions, and the recognition of

this fact led to the adoption of artificial means of increasing the moisture of the air in mills less favorably located. In this country the question of humidity received scant attention for many years. Within the last few years, however, systems of artificial humidification have been installed in practically all of the larger and more modern mills as well as in many of the smaller and older ones.

The fibrous materials used in textile processes are directly influenced by the presence and amount of moisture in their substance. When the fibers contain a certain proportion of moisture they are elastic and cling closely together, and may be carded, combed, drawn out and spun into yarn, and woven into cloth, more easily than when dry. Under such circumstances the work in all these departments runs better and smoother, finer grades of goods may be made from the same stock, there is less waste, and the machines may be run at higher speed with less attention from the operatives. In a dry atmosphere the stock loses much of its moisture, the individual fibers become harsh, stiff and bristly, and when drawn out and twisted into yarn the ends stand out in all directions. Each fiber so lying outside the twist escapes its duty in contributing to the strength of the yarn. Electrification by friction, which is largely increased when the stock is dry, further contributes to this state by causing the fibers to repel one another. Yarn spun under these conditions is harsh and kinky, does not retain its twist, and breaks easily during the various manufacturing operations. Too much moisture in the stock, however, is a decided disadvantage in many of the operations. If the degree of moisture in the stock varies, as is the case when the natural humidity of the air fluctuates through any considerable range, a constant adjustment of the machines is required in order to keep the proper tension upon the yarn. As the temperature of the air increases, its affinity for water vapor also increases, and with higher temperature a greater relative humidity of the air is necessary to prevent the necessary moisture in the yarn from being lost through evaporation.

Much of the power used in textile mills is ultimately converted into heat. Much of this heat, however, is absorbed in the evaporation of water, the heat required for the evaporation of 1 pound of moisture per minute being equivalent to that generated by 25 horse-power of machinery. A proper system of artificial humidification, therefore, not only serves to correct the deficiency in humidity but also helps to control the temperature. With these facts in mind it is evident that the use of artificial humidification is a distinct advantage to the manufacturer. From the viewpoint of the operative, also, artificial humidification is desirable in many particulars. As the work runs more smoothly and evenly and there are fewer breaks and defects to watch for and repair,

the tax on his nervous energy is greatly lessened, while the fact that dust and "fly" are appreciably reduced and much of the excess heat is absorbed contributes to his health and comfort. His earnings may also be increased to some extent, as he is enabled to turn out both more and better work. The temperature and humidity most suitable for obtaining the best results in each process with material of different character and quality have been determined with considerable care, and, generally speaking, have been found to be such as would not be unduly prejudicial to health. With the development of the artificial humidification idea, however, and the appreciation of its benefits, the disadvantages of excessive moisture have frequently been overlooked, and amounts of humidity have been introduced which were not only detrimental to the work but also extremely bad for the workers. It is this feature, rather than any prejudice against the introduction of artificial moisture, which has made laws limiting the amount of humidity necessary.

Methods of increasing Humidity.

There are numerous types of apparatus for increasing the humidity of textile mills, some of which depend upon the introduction of moisture directly into the mill rooms, and others upon treatment of the air forced into the rooms by some system of mechanical ventilation. The introduction of the moisture directly into the air of the mill rooms is the plan most commonly used in Massachusetts mills, and was the only plan found in the mills covered by this investigation. From a sanitary viewpoint it makes little difference whether the moisture is introduced into the air before or after it reaches the mill room. The method by which the moisture is introduced, however, may have considerable sanitary significance. It is well known that when water vapor is produced by evaporation from a moist surface all solid impurities are left behind. The mere fact that evaporation is accelerated by increasing the temperature of the water or air, or both, or by bringing larger volumes of air in contact with the water, does not enter into the question provided the surface from which evaporation occurs does not become dry. On the other hand, a drop of water discharged into the air and evaporated before reaching the floor or other surface must completely disappear as water, leaving its impurities floating in the air. Moisteners constructed on this principle, therefore, introduce into the air those bacteria which existed in the water supply. This difference in effect is of the utmost importance, and has to be kept constantly in mind in any consideration of the quality of mill air.

The simplest method of producing artificial humidity in mill rooms is

by sprinkling water upon the floor and trusting to natural evaporation. This method, known as "degging," was widely practiced at one time, and is still used, or was until recently, in some foreign mills. This practice is objectionable to the operatives who believe that constant standing upon a wet floor is conducive to rheumatic troubles. Early improvements upon "degging" were the provision of shallow channels in the floor for the water, or the placing of shallow pans of water about the room. Another practice, almost or quite as old as that of "degging," and one which is still used to a certain extent in some of the smaller and older mills, is that of introducing steam into the room. In some instances the steam is blown directly into the air, but usually the steam is turned into deep cans to prevent the dirty water and oil which it may carry from damaging the goods in the process of manufacture. The use of steam is objectionable for the reason that it unduly increases the temperature of the rooms.

The modern types of humidifying apparatus are all evolutions from one or the other of these older practices. There are two general types of modern apparatus in which natural evaporation from a moist surface is relied upon to increase the moisture of the air. In one of these the moist surface is supplied by cloths which are kept constantly saturated with water, and in the other by plates over which a thin film of water is constantly flowing. In both cases the air is circulated among the cloths or plates by a fan or blower, and considerable power is required for their operation. It is claimed that apparatus properly constructed and operated on this principle not only adds nothing to the germ content of the air, but, on the contrary, should act as an air purifier by removing much dust, bacteria, etc.

The spray moisteners are made in a large variety of patterns. Some are constructed on the principle of the common household atomizer, water being sucked up and blown into the air as a fine mist by a jet of steam or compressed air. In other types the water is thrown off as a fine spray from a brush or disk revolving at high speed in a box through which a current of air is forced. The types most commonly found in Massachusetts mills, however, are those in which a spray, produced by a fine stream of water under high pressure passing through an orifice of special construction, or by the interference of two or more of such streams, is projected directly into the air of the room. In apparatus of this character the spray nozzles are almost always located inside a housing, and deflectors are provided to distribute the spray and to collect any water which is not atomized. The apparatus being open at the top, some air is drawn through this machine and is washed to a certain extent, but as no other mechanical means is used to ensure a circulation of air through the

apparatus this effect is relatively small. In all of these types of apparatus the excess water is usually collected and, after being passed through a strainer or filter to remove the dirt, is returned to the apparatus, and when the quality of water used for humidification is involved, as is the case under the Massachusetts law, the efficiency of such filters, as well as the initial quality of the water supply of the mill, has to be taken into consideration.

Scope and Methods of Investigation.

In the limited time and with the force at our disposal it was out of the question to attempt a complete investigation of all of the textile mills in Massachusetts. After a careful survey of the field, therefore, certain mills were selected for study in which all of the processes usually employed in the manufacture of cotton and woolen cloth were in operation and in which the range of conditions was thoroughly typical of those common to the cotton and woolen industry in Massachusetts. In all, the conditions in portions of 6 different mills, in which some 17,000 persons were employed, were studied, 4 of these mills being engaged in the manufacture of cotton goods and 2 in the manufacture of woolen goods. In the trade there is a distinction between woolens and worsteds, and the processes of making them differ to some extent, but so far as the subject-matter of this paper is concerned the conditions in the manufacture of each are quite similar, and the term "woolen" may be understood to include both. Furthermore, the distinction between cotton and woolen goods is not a sharp one from this viewpoint, since the essential manufacturing operations in both branches of the industry differ only in detail, and more or less cotton is mixed with the wool in the manufacture of many grades of so-called woolen cloth. While the manufacture of knit goods was not covered by the investigation, this branch of the textile industry differs from those studied only in the manner in which the yarn is interwoven to form a fabric, and the atmospheric conditions and requirements in the knitting room are not unlike those in the weave room.

Throughout the investigations determinations were made of the temperature, humidity and bacterial content of the air, and analyses were made of the water used for humidification; and wherever filters or other apparatus for purifying this water were found, tests were made of the bacterial efficiency of such filters. In addition, data as to variations in temperature and humidity were obtained from the officials of certain mills in which more or less complete records have been kept, and comparisons of the readings of the various types of hygrometers with the standard instruments used in the investigation were made under actual mill conditions wherever such instruments were found installed.

The portion of the law limiting the degree of humidity applied only to the spinning and weaving departments, but that relating to the quality of the water used for humidification was less specific and might be construed to apply to all departments. For this reason, while particular attention was given to the conditions in spinning and weaving rooms, the investigation was extended to cover typical conditions in practically all of the other rooms where humidifiers were used, and for purposes of comparison examinations were made of the conditions in many rooms where there was no artificial humidification.

The sling psychrometer, in the modified form used by Soper in the study of air in the New York subway, was employed throughout for the determinations of humidity. This is essentially the standard instrument recommended by the United States Weather Bureau, but is constructed of aluminum and has an aluminum case with bayonet lock and carrying strap. The relative humidities corresponding to the difference between the actual (dry-bulb) and the sensible (wet-bulb) temperatures have been taken from the standard tables furnished by the United States Weather Bureau (United States Department of Agriculture, Weather Bureau Bulletin No. 235). The humidity values given in these tables differ to some extent from those in tables supplied to the mill officials by the makers of many types of humidifiers and hygrometers, and from those stated in both the Massachusetts law and in the English regulations, all of which are based on the English or "Glaischer" tables.

After a careful comparison of a number of different methods for determining the numbers of bacteria in the air, it was decided to use the sand-filter method, essentially as recommended by the A. P. H. A. Committee on Standard Methods of Air Analysis, and to make comparative tests by the exposed plate method. As an added factor of safety, three sand filters were used in series in each determination instead of two, as prescribed by the standard methods. The wisdom of adding the third sand tube was evident from the fact that a few bacteria were occasionally found in this tube which had passed through the first two tubes. The sand tubes were sterilized individually by dry heat and then fitted together with rubber connections which had been sterilized by alcohol. For convenience in handling, each set of three connected filters was placed in a brass tube closed at each end by a rubber stopper. A large bicycle pump with reversed valves was used to draw the air through the filters, the capacity of this pump being calibrated each day. Some trouble was experienced at first by back-pressure from the pump disturbing the sand, this being finally eliminated by the insertion of a Bunsen valve in a small suction bottle filled with water between the pump and sand-filter train. Fifty liters of air were drawn through the sand for

each sample. During the first part of the investigation four plates were exposed for each sample, one with agar, one with litmus-lactose agar, and two without media, agar and litmus-lactose agar being added respectively to the two dry plates after they were returned to the laboratory. As there was practically no difference in the counts on the wet and dry plates, and as the latter were far more convenient, dry plates only were used during the greater portion of the investigation.

As soon as the samples were received at the laboratory, the sand from each filter tube was mixed with 10 cubic centimeters of sterile water, shaken thoroughly, and after standing one minute for the sand to settle, fermentation tests and agar and litmus-lactose agar plates were made of the supernatant water. All agar plates were incubated four days at 20° C., and litmus-lactose agar plates eighteen hours at 40° C. before counting, both total and red colonies being counted on the latter. Molds were counted on all plates when present. Fermentation tubes were incubated eighteen hours at 40° C., all positive fermentations being tested for the presence of B. coli by the regular Lawrence procedure. All counts by the sand-filter method were multiplied by a factor, the results being expressed as bacteria, etc., per cubic meter of air. For the purpose of averaging results from different samples, all samples which contained less than 200 bacteria per cubic meter — *i.e.*, contained no bacteria in 5 liters — were assumed to contain 100 bacteria per cubic meter. The results of fermentation tests have been expressed as "+" or "0" in 5 liters of air.

In collecting samples an ordinary camera tripod with an enlarged top was used as a support for the sand tubes and exposed plates, the intake of the sand tube and the exposed plates being located about 2 feet apart and about 5 feet above the floor.

Condition of the Air in Spinning and Weaving Departments of Certain Cotton and Woolen Mills.

Spinning Rooms. — In the course of the investigation twelve spinning rooms in three different cotton mills and two different woolen mills were inspected and studied. In the cotton mills only ring spinning was found, four of the rooms examined being equipped with humidifiers, while four others had no humidifiers in operation. Although artificial humidification is supposed to increase the moisture-content of the air and to lower the temperature to some extent, the humidity was not appreciably greater in the rooms which were equipped with humidifiers, while those containing no humidifiers were generally somewhat cooler. In the four rooms containing humidifiers the dry-bulb temperature ranged from 76° to 81° F., the wet-bulb temperature from 45° to 63° F., and the

relative humidity from 29 to 59 per cent. In the four rooms without humidifiers the actual temperature varied from 68° to 79° F., the sensible temperature from 54° to 63° F., and the relative humidity from 27 to 46 per cent. Although the temperature of six of these eight spinning rooms was above 75° F. and that of two of them above 80° F., the sensible or wet-bulb temperature was in all cases below 70° F.

In the woolen mills two English, or cap, spinning rooms and two French, or mule, spinning rooms were examined. In the English spinning rooms the dry-bulb temperature ranged from 72° to 86° F., the wet-bulb temperature from 57° to 65° F., and the relative humidity from 21 to 42 per cent. Neither of these rooms contained humidifiers. In French spinning a much greater amount of moisture is said to be required in the air than in the English process, and both French spinning rooms which were examined were equipped with humidifiers. In these two rooms the actual temperature ranged from 76° to 87° F., the sensible temperature from 73° to 82° F., and the relative humidity from 65 to 92 per cent. While the actual temperature of these French spinning rooms was very little higher than that in many of the other spinning rooms, the sensible temperature was very much higher, owing to the increased humidity, and the rooms felt very hot and stuffy. According to the superintendent of one of these rooms, the humidity was not supposed to fall below 65 per cent., while the superintendent of the other mule spinning room stated that the normal humidity which he attempted to maintain was about 72 per cent., and provision was made for blowing steam into the air if the artificial humidifiers failed to produce the required effect. In the former of these rooms the average sensible temperature was 74° F., while in the latter nearly all of the wet-bulb thermometer readings were above 75° F., and many readings were above 80° F., or considerably above the "comfort point."

The numbers of room-temperature bacteria in the air of the cotton spinning rooms ranged from 600 to 8,200 per cubic meter, and the numbers of bacteria of the body-temperature types ranged from less than 200 to about 15,000 per cubic meter. On the exposed plates, the room-temperature counts varied from 3 to over 500, and the body-temperature counts varied from 4 to 350. The average number of both room-temperature and body-temperature bacteria was much higher in those rooms which were equipped with humidifiers than in those containing no humidifiers, although the reverse was true in the case of counts on the exposed plates. Fermenting organisms were found in 5 liters of air in about two-thirds of the samples from rooms which contained no humidifiers and in about 30 per cent. of the samples from the rooms in which air moisteners were in operation, while B. coli were found in about 17 per

cent. of the samples from the former, but were not found in the latter class of rooms.

The bacterial content of the air of the English spinning rooms in the woolen mills was much lower than in similar rooms in the cotton mills, the largest number of bacteria found in any sample from an English spinning room being about 600 per cubic meter, and a considerable proportion of the samples contained less than 200 bacteria per cubic meter. In one of the rooms where wool was being spun on mules also the bacterial content of the air was very low, but in the other French spinning room extremely high numbers of body-temperature bacteria were obtained on all samples collected by the sand-filter method, although the counts upon the exposed plates were low in all cases. The probable reason for the high bacterial counts in the mule spinning room in this mill, and also in the ring spinning rooms in certain of the cotton mills, will be discussed in a subsequent section. No fermenting organisms were found in the air of any of these wool spinning rooms.

The average results of the examination of the air in these various spinning rooms are shown in Table II.

Weave Rooms. — The air conditions in fifteen different weave rooms were investigated, thirteen of the rooms being distributed in four different cotton mills and two being located in a woolen mill. In six of the cotton weave rooms no humidifiers were in operation; five contained humidifiers of the spray type and two were equipped with humidifiers of the cloth-filter type. In the rooms containing humidifiers the dry-bulb temperature ranged from 62° to 89° F., the wet-bulb temperature from 49° to 73° F., and the relative humidity from 32 to 64 per cent. In six of these rooms the average dry-bulb temperature was over 75° F., and in two the average was over 80° F. In only one of these rooms was the average wet-bulb or sensible temperature higher than 70° F., although in one other room (No. 14) a wet-bulb temperature above 70° F. was found in a few places. Both of these rooms were equipped with humidifiers of the cloth-filter type. In the six cotton weave rooms which did not contain humidifiers the air temperature ranged from 57° to 83° F., the wet-bulb temperature from 45° to 65° F., and the relative humidity from 31 to 69 per cent. In four of these rooms the dry-bulb temperature averaged above 75° F., and in two the average temperature was above 80° F., but in no case were wet-bulb temperatures as high as 70° F. found in any of these rooms. There was considerable variation in the temperature and humidity, even in the rooms in which artificial humidification was practiced, differences of 8° to 10° in temperature and of 20 to 25 per cent. in humidity being frequently observed in different parts of the same room. Both of the two wool weave rooms examined were in

the same mill, neither being equipped with humidifiers. The range of both temperature and humidity in these rooms was very slight, the average dry and wet-bulb temperatures being 77° and 59° F., respectively, and the average humidity about 31 per cent.

There was a wide difference in the bacterial content of the air of the various cotton weave rooms. In two rooms which were equipped with humidifiers of the cloth type the number of room-temperature bacteria averaged 12,000 and 6,800 per cubic meter, and the types of bacteria growing at body temperature averaged 1,500 and 2,400, respectively. In another room in the same mill which contained no humidifiers the room-temperature bacteria averaged over 88,000 and the body-temperature bacteria nearly 13,000 per cubic meter. The air of the rooms which contained humidifiers of the spray type almost without exception contained many more bacteria of all types, and also more molds, than the air in the rooms in the same mills which were not equipped with humidifiers. The numbers of bacteria in the air of four of the five rooms which were equipped with this type of humidifier averaged over 5,000 per cubic meter, while in the same mills two of the rooms where there was no artificial humidification showed room temperature counts by the sand-filter method of only 400 bacteria per cubic meter, and in only one room was a count of over 5,000 per cubic meter obtained. Fermenting bacteria were found in 5 liters of air in about 21 per cent. of the samples collected from rooms containing humidifiers and in about 46 per cent. of the samples from rooms without humidifiers, and B. coli were found in about 7 per cent. of the samples from each of these two classes of rooms.

In the two wool weave rooms the numbers of bacteria in the air were very low, the highest count obtained being only 800 per cubic meter. No fermenting organisms were found in any of the samples from either of these rooms.

The average results of the examination of the air in these various weave rooms are shown in Table III.

TABLE II. — *Average Results of Examination of Air in Spinning Rooms.*

Cotton Spinning Rooms containing Humidifiers.

MILL.	Room.	Temperature (Degrees F.). Dry-bulb.	Temperature (Degrees F.). Wet-bulb.	Relative Humidity.	In 1 Cubic Meter. Bacteria. 20° C.	In 1 Cubic Meter. Bacteria. 40° C. Total.	In 1 Cubic Meter. Bacteria. 40° C. Red.	In 1 Cubic Meter. Molds.	Plates exposed Fifteen Minutes. Bacteria. 20° C.	Plates exposed Fifteen Minutes. Bacteria. 40° C. Total.	Plates exposed Fifteen Minutes. Bacteria. 40° C. Red.	Plates exposed Fifteen Minutes. Molds.
B, ...	1	80	62	30	4,200	1,500	175	300	47	13	1	1
B, ...	2	77	64	49	2,200	750	100	500	11	26	0	1
C, ...	3	84	60	31	900	12,500	10,700	150	30	31	7	0
D, ...	4	84	64	32	6,900	3,800	2,600	100	430	170	55	3
Average, . .	–	81	63	37	3,550	4,600	3,400	260	130	60	16	1
Maximum, . .	–	87	66	59	8,200	15,000	12,400	800	520	250	100	4
Minimum, . .	–	76	45	29	600	–[1]	–[1]	–[1]	3	4	0	0
Cotton Spinning Rooms without Humidifiers.												
B, ...	5	79	60	31	1,800	1,200	100	400	275	10	0	3
C, ...	6	76	58	31	2,200	900	150	250	320	110	13	1
C, ...	7	70	57	37	1,500	500	350	2,200	16	270	260	1
D, ...	8	72	58	42	4,400	2,000	800	400	300	70	32	0
Average, . .	–	74	58	35	2,500	1,150	350	810	230	115	76	1
Maximum, . .	–	79	63	46	4,400	2,000	800	2,800	450	350	340	3
Minimum, . .	–	68	54	27	1,000	400	–[1]	–[1]	12	10	0	0
Wool (French) Spinning Rooms containing Humidifiers.												
E, ...	9	81	74	74	4,100	31,800	25,300	125	6	5	1	0
F, ...	10	84	79	81	575	125	125	175	2	2	0	1
Average, . .	–	82	77	78	2,300	16,000	12,700	150	4	4	1	1
Maximum, . .	–	87	82	92	15,600	36,400	30,400	200	15	7	2	1
Minimum, . .	–	76	73	65	–[1]	–[1]	–[1]	–[1]	0	1	0	0
Wool (English) Spinning Rooms without Humidifiers.												
E, ...	11	72	58	40	100	100	100	150	5	33	8	1
E, ...	12	83	61	26	400	150	150	150	23	20	15	2
Average, . .	–	78	60	33	250	125	125	150	14	26	11	2
Maximum, . .	–	86	65	42	600	200	200	200	26	63	30	3
Minimum, . .	–	72	57	21	–[1]	–[1]	–[1]	–[1]	3	1	0	0

Fermenting organisms found in some samples of air from Rooms 2, 4, 6, 7 and 8.
No B. coli were found in any of the samples.
All maximum and minimum results based on individual determinations.
All humidifiers of spray type. Room 10, Mill F, also equipped with auxiliary steam jets.

[1] Less than 200.

TABLE III. — *Average Results of Examination of Air in Weaving Rooms.*

Cotton Weave Rooms containing Humidifiers.

MILL.	Room.	Temperature (Degrees F.).		Relative Humidity.	In 1 Cubic Meter.				Plates exposed Fifteen Minutes.			
					Bacteria.				Bacteria.			
						40° C.				40° C.		
		Dry-bulb.	Wet-bulb.		20° C.	Total.	Red.	Molds.	20° C.	Total.	Red.	Molds.
A, ...	13	84	71	49	12,000	1,500	700	220	46	17	5	0
A, ...	14	82	67	47	6,800	2,400	870	550	250	61	13	1
B, ...	15	77	64	49	5,450	1,800	525	550	14	10	0	0
B, ...	16	78	66	52	6,550	23,500	18,700	425	250	11	0	0
C, ...	17	76	63	47	2,500	2,500	1,400	1,600	19	61	33	0
C, ...	18	78	63	43	5,100	4,700	1,600	470	29	19	4	0
D, ...	19	66	52	37	9,100	6,700	1,330	870	460	25	10	0
Average, . .	–	77	64	46	6,800	6,200	3,600	670	152	29	9	0
Maximum, . .	–	89	73	64	12,400	72,000	61,000	2,000	990	210	40	5
Minimum, . .	–	62	49	32	1,400	200	–[1]	–[1]	6	4	0	0

Cotton Weave Rooms without Humidifiers.

MILL.	Room.	Dry-bulb.	Wet-bulb.	Relative Humidity.	20° C.	Total.	Red.	Molds.	20° C.	Total.	Red.	Molds.
A, ...	20	76	64	55	88,500	12,800	4,000	950	870	900	44	0
C, ...	21	81	64	38	4,200	1,400	200	100	28	10	2	0
C, ...	22	81	63	36	400	1,000	300	350	8	8	3	1
C, ...	23	76	59	36	2,000	530	200	200	28	10	0	0
D, ...	24	57	45	35	400	800	400	100	150	10	4	0
D, . . .	25	65	50	35	9,100	10,100	4,800	200	112	25	4	0
Average, . .	–	72	58	39	17,400	4,400	1,650	317	200	160	9	0
Maximum, . .	–	83	65	69	188,000	20,400	6,600	3,400	1,450	3,025	77	2
Minimum, . .	–	57	45	31	200	200	–[1]	–[1]	3	3	0	0

Wool Weave Rooms without Humidifiers.

MILL.	Room.	Dry-bulb.	Wet-bulb.	Relative Humidity.	20° C.	Total.	Red.	Molds.	20° C.	Total.	Red.	Molds.
E, ...	26	75	57	31	200	800	100	100	12	5	0	0
E, ...	27	79	60	31	200	200	100	400	62	8	2	0
Average, . .	–	77	59	31	200	500	100	250	37	7	1	0

Fermenting organisms found in some samples of air from weave Rooms 13, 14, 15, 18, 19, 20 and 25.
B. coli found in some samples of air from Rooms 19 and 20.
All maximum and minimum results based on individual determinations.
Humidifiers in Mill A (Rooms 13 and 14) of cloth-filter type.
Humidifiers in Mills B, C and D (Rooms 15 to 19, inclusive) of spray type.

[1] Less than 200.

Air Conditions in Picker and Carding Rooms.

So far as the amount of dust in the air is concerned, the rooms where the picker and carding processes are in operation probably represent the worst conditions to be found in the textile industry.

Picker Rooms. — In the picker room heavy machinery opens up the masses of cotton or wool fibers, mixes it, and beats it to remove the dirt. The best results are accomplished if the fibers are dry, and the humidity is usually kept as low as possible. Most picker machines are equipped with exhaust fans to draw away the dirt, but a large amount of dust and fly escapes into the air in cotton picker rooms. Wool is usually scoured or washed before being put through the picker, and the air conditions in this department are, as a rule, much better in picker rooms in woolen than in cotton mills. In the two cotton picker rooms examined, the range in temperature was from 65° to 72° F., and in humidity was from 32 to 42 per cent. In one of these rooms the total number of bacteria near the intake of the picker machine averaged over 23,000, and at the outtake of the machine over 11,000 per cubic meter, and the bacteria growing at body temperature averaged 8,800 and 1,800, respectively. There were large numbers of molds in the air in this room, and fermenting organisms were found in many of the samples. On plates exposed for fifteen minutes the counts averaged about 600 when incubated at room temperature and about 100 when incubated at body temperature. In the other cotton picker room the total numbers of bacteria obtained from 1 cubic meter of air averaged about 12,000 at the intake and about 95,000 at the outtake of the machine. The numbers of bacteria developing at body temperature in this room varied from 200 to over 9,000 per cubic meter, and the number of molds averaged 600 per cubic meter. Plates exposed fifteen minutes in this room showed counts ranging from 500 to over 3,000 after incubation at room temperature, and from 15 to over 700 after incubation at body temperature. Although fermenting organisms were isolated from 5 liters of air in every sample collected in this room, in no case were bacteria of the colon type isolated. It is interesting to note, however, that the proportion of bacteria producing red colonies on litmus-lactose agar plates was extremely low in both of these cotton picker rooms. In the one wool picker room examined, the temperature averaged about 66° F., and the humidity about 45 per cent. The total number of bacteria in the air of this room averaged about 4,600 per cubic meter, and the average body temperature count was less than 200 per cubic meter. The numbers of colonies developing on exposed plates were also much lower than in the rooms where cotton was being manipulated, the average room-temperature count being about 35 and the average body-

temperature count being about 80. The number of molds in the air of this room was also very low, and fermenting bacteria were not isolated from any of the samples.

Carding Rooms. — In the carding machines the stock which has been freed from coarse dirt and partly opened up by the pickers is further manipulated by toothed rolls until it is entirely free from dirt and lumps, with each fiber free and separate. In cotton carding rooms the air is generally filled with dust and fly, but as the wool is free from dirt when it comes to the cards, and as oil is added to the stock in the carding process to replace the natural lubricant which was removed by scouring, the atmospheric conditions in the wool carding rooms are far less objectionable.

The carding rooms in two cotton mills and one woolen mill were examined. In carding wool the work is said to run better when the humidity is relatively high, and the wool carding room examined was equipped with humidifiers of the spray type. In this room the temperature ranged between 68° and 75° F., and the relative humidity between 47 and 100 per cent. Although the average sensible temperature in this room was only 63° F., a number of wet-bulb readings of 70° F. or over were obtained, and the records kept by the superintendent show that there are many days when the sensible temperature does not fall below 70° F. The average bacterial content of the air varied from 200 to 1,600 per cubic meter, as shown by room-temperature plates, and from 600 to 2,200, as shown by body-temperature plates. On plates exposed for fifteen minutes, from 30 to 210 colonies developed after incubation at room temperature, and from 60 to 170 after incubation at body temperature. Fermenting organisms were not found in any of the samples, and the numbers of molds were relatively low. In the carding of cotton it is attempted to maintain a relatively low humidity, as any excess of moisture tends to make the cotton fibers stick to the rolls. The air in both of the cotton card rooms investigated was full of dust and fly, although less so than that of the picker rooms. In one of these rooms no artificial humidification was employed, while the other was equipped both with spray moisteners and with steam drums, the latter being in use at the time the examination was made. The physical condition of the air in both of these rooms was practically the same, the temperature ranging between 74° and 82° F., and the humidity between 27 and 33 per cent. In one of these rooms the average bacterial content of the air was over 12,000 per cubic meter, as shown by room-temperature counts, and over 45,000, as shown by body-temperature counts. About two-thirds of the bacteria developing on the litmus-lactose agar plates produced red colonies. Organisms fermenting dextrose were not found, however, in any

of the samples. The average number of bacteria developing on exposed plates was about 2,200 after incubation at room temperature, and about 750 after incubation at body temperature. In the cotton carding room, in which there was no artificial humidification, the total numbers of bacteria averaged over 200,000 per cubic meter, and the numbers developing at body temperature averaged about 18,000. On plates exposed for fifteen minutes in this room large numbers of bacteria developed after incubation at both temperatures, the numbers being so great in the majority of cases that they could not be estimated with any degree of accuracy. Molds were present in the air of this room in considerable numbers, and fermenting organisms were found in the majority of 5-liter samples examined.

The average results of the examination of the air in these various picker and carding rooms are shown in Table IV.

Table IV. — *Average Results of Examination of Air in Picker and Carding Rooms.*

Picker Rooms.

MILL.	Stock.	Temperature (Degrees F.).		Relative Humidity.	In 1 Cubic Meter.				Plates exposed Fifteen Minutes.			
					Bacteria.				Bacteria.			
						40° C.				40° C.		
		Dry-bulb.	Wet-bulb.		20° C.	Total.	Red.	Molds.	20° C.	Total.	Red.	Molds.
C, . .	Cotton, .	72	57	42	17,200	5,300	100	1,200	595	95	10	5
D, . .	Cotton, .	67	52	32	54,000	4,700	1,500	600	1,800	370	1	0
E, . .	Wool, . .	66	54	45	4,600	200	100	100	35	80	40	0

Carding Rooms.

MILL.	Stock.	Dry-bulb.	Wet-bulb.	Relative Humidity.	20° C.	Total.	Red.	Molds.	20° C.	Total.	Red.	Molds.
C, . .	Cotton, .	81	60	27	12,800	45,400	31,800	100	2,200	760	0	0
D, . .	Cotton, .	76	58	30	230,000	18,000	100	300	–[1]	–[1]	–[1]	–[1]
F, . .	Wool, . .	74	63	77	1,000	1,000	600	500	100	95	20	2

Fermenting organisms found in some samples of air from the picker rooms in both cotton mills and the carding room in cotton Mill D.

No B. coli found in any of the samples.

Spray humidifiers in carding room in Mill F and steam drums in carding room in Mill D. No humidifiers in other rooms.

[1] Too many to count.

Air Conditions in Certain Other Wool Manufacturing Processes.

In addition to the investigation of conditions in the various textile processes previously discussed, examinations were also made in rooms in which fourteen other processes were in operation. Certain of these processes are common to both cotton and wool working, while certain others are commonly employed only in woolen or worsted manufacture. At the time the investigation was made, business in the textile industry was at a low stage, and most of the rooms which were being operated to their full capacity were relatively small, and in many cases were not equipped with humidifiers, although artificial humidification is often employed in certain of these processes elsewhere. For these reasons the number of determinations which were made in most of these rooms was sufficient only to give a fairly representative idea of the air condition surrounding the various processes. The average results of examinations of the air in rooms where these various processes were in operation are shown in Table V.

Wool Sorting. — In the sorting room the bales of wool are opened, sorted into different grades, and those grades mixed in the proper proportions for the kind of cloth into which the wool is to be made. The wool as received contains the natural wool grease and a large amount of dirt and foreign matter. It is necessary to maintain a high temperature in the sorting room to soften the grease in order that the fleece may be readily pulled apart, and as much dirt sifts out in the sorting process the air is usually very dusty. The room examined was not equipped with humidifiers, and the humidity of the air was relatively low, the dry-bulb temperature being about 80° F., the wet-bulb temperature about 62° F., and the relative humidity about 35 per cent. The bacterial content of the air in this room was considerably higher than in any of the other rooms in either of the woolen mills, although not as high as in certain departments in the cotton mills. The total number of bacteria averaged over 11,000 per cubic meter, and the body-temperature bacteria averaged about 1,000 per cubic meter. The number of molds found in the air was also high, averaging 2,400 per cubic meter. On plates exposed for fifteen minutes about 280 colonies developed after incubation at room temperature, and about 50 after incubation at body temperature.

Combing. — In the manufacture of worsteds the carded stock is passed through machines which comb it to remove the short fibers or noils and to lay the longer fibers smooth and nearly parallel. Three combing rooms in two different mills were examined. In one of these which was equipped with humidifiers of the spray type the dry-bulb temperature ranged from 65° to 77° F., the wet-bulb temperature from 56° to 66° F.,

and the relative humidity from 49 to 57 per cent. No bacterial examinations were made in this room. In the other two combing rooms, neither of which contained humidifiers, the dry-bulb temperature varied from 75° to 79° F., the wet-bulb temperature from 57° to 59° F., and the relative humidity from 25 to 29 per cent. The average bacterial content of the air as determined by the sand-filter method was about 100 per cubic meter in one of these rooms and about 1,400 per cubic meter in the other. The numbers of bacteria developing on exposed plates were similar in both rooms, the average being 17 and 6, respectively.

Drawing. — From the combs the stock goes to the drawing machines where a number of strands of fiber are slightly twisted together and drawn out preparatory to spinning. In the manufacture of certain kinds of cloth both the combing and drawing are omitted and the sliver from the cards goes directly to the spinning machines. Two different methods are used for drawing wool, known respectively as the English and French systems. Four English and two French drawing rooms in two different mills were investigated, physical examinations only being made in one room of each kind and complete examinations being made in the other four rooms. Considerable moisture and a fairly high temperature are considered essential in drawing wool by either of these processes, both French drawing rooms and one English drawing room being equipped with humidifiers of the spray type and steam being used to increase the humidity in the three other English drawing rooms.

In the English drawing rooms the dry-bulb temperature ranged from 68° to 79° F., the wet-bulb temperature from 58° to 78° F., and the relative humidity from 29 to 78 per cent. In one of the rooms in which steam was used the sensible temperature was above 70° F. in places, while in another room the sensible temperature averaged 78° F., or considerably above the "comfort point." Bacterial examinations were made only in the three rooms in which steam was used to increase the humidity. The total bacteria in these rooms ranged from less than 200 to over 6,000 per cubic meter, the body-temperature bacteria from less than 200 to over 3,000, and the number of molds in the air from 200 to 600 per cubic meter. The bacterial counts on plates exposed fifteen minutes in all of these rooms were low, but in a number of cases the body-temperature counts were somewhat higher than the room-temperature counts.

In the two French drawing rooms the variation in both actual and sensible temperatures was relatively small, the dry-bulb temperatures ranging from 72° to 77° F., the wet-bulb temperatures from 66° to 68° F., and the relative humidity from 59 to 78 per cent. The bacterial

content of the air in both of these rooms was very low, the largest number of bacteria found in any sample being about 400 per cubic meter.

Twisting. — After spinning, the yarn for certain kinds of cloth is further twisted to produce a hard finish, or two or more strands of different yarns are twisted together. The average dry and wet bulb temperatures in the twisting room examined were 69° and 56° F., respectively, the average humidity was about 43 per cent., and the average bacterial content of the air was about 400 per cubic meter.

Beaming and Winding. — The yarn during spinning is usually wound upon spools which are then transferred to another machine where the contents of a large number of spools are rewound upon one large spool or section beam. In the room examined the dry-bulb temperature was about 77° F., the wet-bulb temperature about 60° F., and the relative humidity about 36 per cent. The average number of bacteria in the air of this room was about 600 per cubic meter.

Dressing and Slashing. — In the dressing room the yarn from the section beams is usually run through tubs of sizing or dressing, then through squeeze rolls to remove the excess of size, after which it passes to the slasher where it is dried by being passed over heated rolls. These two processes are frequently combined in one room, but in the mill investigated were performed in separate rooms. The temperature and humidity conditions in both of these rooms were practically the same, the dry-bulb temperature being about 80° F., the wet-bulb temperature about 62° F., and the relative humidity about 36 per cent. Dressing being a wet process, the room was free from dust and the bacterial content was very low, less than 200 bacteria per cubic meter being collected by the sand filters. In the slasher room there was some dust, but as most of this originated from the heated yarn and dried particles of size, the bacterial content of the air was also low, averaging less than 600 per cubic meter.

Inspecting. — During the processes subsequent to weaving, the cloth is usually carefully examined by perchers or inspectors three separate times; first, after it comes from the looms, to check imperfections in weaving; second, after the knots and ends have been trimmed off and the imperfections have been mended; and third, after finishing. The inspecting rooms are generally clean and the air free from dust. In the inspecting room examined the average dry-bulb temperature was about 79° F., the wet-bulb temperature was about 62° F., and the relative humidity was about 37 per cent. The total number of bacteria in the air of this room was about 800 per cubic meter.

Singeing. — Before dyeing and finishing, the cloth is drawn over red-

hot rolls, or is passed through a gas flame, to remove the projecting fibers or nap and clean the fabric. In the room examined the singeing was being done with a gas flame, and the air was full of dust and smoke. The average temperature of this room was about 74° F., the wet-bulb temperature was about 65° F., and the average humidity was about 62 per cent. The bacterial content of the air in this room was very low, the average number of bacteria being about 200 per cubic meter.

Wet Finishing. — After being singed the cloth is passed through hot water, rolled on perforated cylinders and allowed to stand for some hours until cool, to set the fibers and prevent excessive shrinkage in the following operations. It is then scoured to remove dirt and grease. Before dyeing, certain kinds of cloth are also submitted to a process called "fulling" or "milling" in which the moisture, heat and friction, during the passage of the soaped cloth between rapidly revolving rolls under high pressure, shrink it to the required extent, and soften the fiber, thereby removing the harsh feel. In the wet finishing room examined, the dry-bulb temperature was about 68° F., the wet-bulb temperature was about 62° F., and the relative humidity was about 71 per cent. The number of room-temperature bacteria in the air was very low, but over 8,000 bacteria of the body-temperature types were found per cubic meter.

Extracting. — After "wet finishing" the cloth is dyed and washed and is then put through centrifugal machines to extract the water before being "dry finished." In the extracting room examined, the average dry-bulb temperature was about 69° F., the wet-bulb temperature was about 64° F., and the relative humidity was about 76 per cent. By the sand-filter method only about 200 bacteria per cubic meter were found in the air of this room, but on plates which had been exposed for fifteen minutes about 225 colonies developed at room temperature and about 30 at body temperature.

Dry Finishing. — After being extracted and dried by being run over steam coils, the cloth passes to the dry finishing room where it is first run through shearing machines to remove or even up the projecting fibers and is then pressed. More or less fly results from the shearing process, which is usually removed by suction fans. The air of the dry finishing room examined was comparatively free from dust and fly. The average temperature of this room was about 75° F., the wet-bulb temperature was about 74° F., and the relative humidity was about 54 per cent. The bacterial content of the air was comparatively low, but over 2,000 molds per cubic meter were found by the sand-filter method.

TABLE V. — *Average Results of Examinations of Air in Rooms where Various Other Worsted Manufacturing Processes were in Operation.*

PROCESS.	Temperature (Degrees F.).		Relative Humidity.	In 1 Cubic Meter.				Plates exposed Fifteen Minutes.			
				Bacteria.				Bacteria.			
					40° C.				40° C.		
	Dry-bulb.	Wet-bulb.		20° C.	Total.	Red.	Molds.	20° C.	Total.	Red.	Molds.
Wool sorting,	80	62	35	11,200	1,000	200	2,400	280	50	0	2
Combing,	78	58	27	750	150	100	100	12	7	2	0
English drawing,	77	64	60	1,300	1,000	500	250	3	11	8	0
French drawing,	76	67	63	100	400	150	100	5	9	2	0
Twisting,	69	56	43	400	100	100	100	4	2	1	2
Beaming and winding,	77	60	36	600	200	100	200	20	14	12	1
Dressing,	79	62	36	100	250	100	250	20	40	22	1
Slashing,	80	62	35	200	600	400	200	28	65	42	3
Inspecting,	79	62	37	800	100	100	100	22	4	1	1
Singeing,.	74	65	62	200	100	100	100	75	2	0	8
Wet finishing,	68	62	71	100	8,400	6,600	100	2	2	0	0
Extracting,	69	64	76	200	200	100	400	225	28	9	8
Dry finishing,	75	64	54	100	800	400	2,200	67	12	3	0

No fermenting organisms found in the air from any of these rooms.

Combing and English and French drawing rooms examined in both Mill E and Mill F. Other processes examined only in Mill E.

Humidifiers in one combing room and in all drawing rooms. No humidifiers in any of the other rooms.

Effect of Humidifiers on Numbers of Bacteria and Molds in the Air.

In the cloth-filter type of humidifier, such as was studied in Mill A, a greater or less number of bacteria should be removed from the air during its passage through the wet cloths. The bacteria contained in the water which is evaporated into the air, however, should all be left behind on the cloths or in the unevaporated water. The humidifiers in this mill were operated entirely with city water, the small amount of unevaporated water being wasted.

The results of analyses of the air before and after passing through these humidifiers show a reduction of about 58 per cent. in total bacteria, about 30 per cent. in the body-temperature bacteria and about 89 per cent. in molds. The air from similar rooms in this mill which were not equipped with humidifiers contained about seven times as many room-temperature bacteria, nearly nine times as many body-temperature bacteria and about four times as many molds as the air of the rooms which

were equipped with humidifiers. The unevaporated water coming away from these humidifiers contained about fifteen times as many bacteria as the water entering them. An examination of the cloths from one of these humidifiers showed that it was covered with a thick felted layer of cotton fibers, etc., which had been removed from the air.

With the various patterns of spray type of humidifiers, such as were studied in the other five mills, the water is projected directly into the air before being evaporated, with the result that any impurities in the water are added to those in the air. The action of the spray induces a certain flow of air through the apparatus which is washed by the unevaporated water, but the amount of air drawn in and purified in this manner is much smaller than in the case of the cloth-filter type of apparatus. In considering the effect of these humidifiers, therefore, it is necessary to take into account two opposing factors, — the addition of germs to the air of the room by the evaporation of the spray, and the removal of germs from the air drawn through the apparatus by the unevaporated water. In four of the five mills which contained humidifiers of this type, the average bacterial content of samples of air collected beneath those humidifiers was considerably greater than that of samples collected at points intermediate between them. In the case of Mill E the air under the humidifiers contained about forty times as many bacteria as that at a distance. The average difference in the numbers of body-temperature bacteria, however, was relatively slight except in the case of Mill B, in which the counts on samples from under the spray averaged nearly three times as high as those on samples collected some distance away. In all of these mills the average bacterial content of the air of rooms which contained spray apparatus was considerably higher than that of rooms which were not so equipped. In the case of Mill E, the rooms in which the air had been artificially humidified contained over twenty times as many room-temperature bacteria and over one hundred times as many body-temperature bacteria as those in which the air had not been treated.

The results of analyses of the water before and after passing through these humidifiers show that in general no considerable numbers of bacteria were removed from the air of the various rooms in which they were installed. In Mills B, E and F there was an increase in the room-temperature bacteria in the water amounting to 45, 19 and 10 per cent., respectively, while in Mills C and D there was a decrease of 61 and 38 per cent., respectively. Only in Mill E was any increase noted in the body-temperature counts on the unevaporated water, however, while in Mill F a reduction of 58 per cent. in these counts was noted.

The amount of water supplied to the various types of spray humidifiers and the proportion of that water evaporated could not readily be

determined, and the statements of the officials in the different mills in this particular were usually rather indefinite and contradictory, so that it is not possible to compute with any degree of accuracy the number of bacteria introduced into the air by any of these humidifiers. The following figures, however, will serve as an illustration of the possible effect of one of these humidifiers. In Mill A it was stated that 85 gallons of water were supplied to each humidifier and that 3 gallons of this water were evaporated. In the weave rooms in this mill the humidifiers were spaced 40 feet apart and the room was about 12 feet high, each humidifier therefore supplying moisture to approximately 550 cubic meters of air. The water entering the humidifier contained about 38,000 bacteria per cubic centimeter. Assuming these figures to be correct, about 429,000,000 bacteria were introduced each day into the room by this humidifier, or about 780,000 bacteria for each cubic meter of air served. In this particular mill there was a considerable increase in the numbers of bacteria in the water during its passage through the humidifiers, and the same method of computation would show that more than seven times as many bacteria were removed as were introduced into the air. The results of numerous analyses, however, show that the air in the immediate vicinity of the humidifiers in this and other rooms in this mill contained 35 per cent. more bacteria than the air 30 or 40 feet away, while the average bacterial content of the air in rooms which contained humidifiers was almost twice as great as that of similar rooms which were not artificially humidified.

In two of the mills, B and D, the polluted Merrimack River water was used as a source of supply for the humidifier systems; in three others, A, C and E, the city supply was used; and in Mill F the river water after filtration through high-rate filters without coagulants was used. In the case of Mill A, in which cloth-filter humidifiers were used, the greater part of the city water supplied to the cloths was evaporated and the small excess was wasted. With this type of apparatus, moreover, it is not probable that any of the water bacteria could pass into the air so long as the cloths were wet, and the quality of the water could have little effect on the bacterial content of the air. In the other mills, however, only a small proportion of the water supplied to the spray humidifiers was evaporated, the unevaporated water being passed through filters and returned to the humidifiers together with sufficient new water to make up the deficiency. So far as the total bacterial content of the humidified air or of the water supplied to the spray humidifiers is concerned, little difference is to be observed in the results which can be attributed to the quality of the water. The unevaporated water coming from the humidifiers in any of these mills always contained large numbers of bacteria.

The filters provided to purify this water, while they may have satisfactorily removed the lint and dirt which would clog the orifices of the spraying devices, did not in any case show any considerable degree of bacterial efficiency. As a result, the water circulated through the humidifier system was always of high bacterial content, and the small proportion of new water added to replenish that which was evaporated was not sufficient to materially influence the bacterial content of the water in the system. In the case of Mill B, where river water was used, the numbers of body-temperature bacteria in the water supplied to the humidifiers were very much higher than in any of the other mills, but in Mill D, in which river water was also used, these counts were not appreciably higher than in Mill E where the city water was used.

The average effect of humidification upon the bacterial content of the air and the analyses of the water in the humidification systems of the different mills are shown in Tables VI. and VII.

TABLE VI. — *Effect of Humidifiers on Germ Content of Air of Mills.*

MILL.	Type of Humidifier.	PER CENT. WHICH COUNTS ON SAMPLES COLLECTED NEAR HUMIDIFIERS WERE OF THOSE COLLECTED 20 TO 40 FEET AWAY.			PER CENT. WHICH COUNTS ON SAMPLES IN ROOMS CONTAINING HUMIDIFIERS WERE OF THOSE WITHOUT HUMIDIFIERS.		
		BACTERIA.		Molds.	BACTERIA.		Molds.
		20° C.	40° C.		20° C.	40° C.	
A,	Cloth filter,	42	70	11	10	15	37
B,	Spray,	135	270	90	194	104	92
C,	Spray,	125	85	55	140	1,136	237
D,	Spray,	80	95	110	127	122	40
E,	Spray,	4,000	112	100	2,050	11,000	100
F,	Spray,	175	100	50	–	–	–

TABLE VII. — *Average Bacterial Analyses of Water before and after passing through Spray Humidifiers.*

Bacteria per Cubic Centimeter, 20° C.

	Mill A.	Mill B.	Mill C.	Mill D.	Mill E.	Mill F.
Water entering humidifiers,	22	37,800	15,200	21,000	16,500	2,460
Unevaporated water after passing through humidifiers,	334	56,500	5,900	13,000	18,900	2,700
Effluent water filters as returned to humidifiers,	–	35,300	16,000	20,500	17,300	2,300
Water used to replenish supply,	22	47,500	25	30,000	650	5,500

Table VII. — *Average Bacterial Analyses of Water before and after passing through Spray Humidifiers* — Concluded.

Bacteria per Cubic Centimeter, 40° C. Total.

	Mill A.	Mill B.	Mill C.	Mill D.	Mill E.	Mill F.
Water entering humidifiers,	1	258	28	52	49	24
Unevaporated water after passing through humidifiers,	6	233	23	50	53	10
Effluent water filters as returned to humidifiers,	–	248	28	50	52	22
Water used to replenish supply,	1	300	24	80	1	52

Bacteria per Cubic Centimeter, 40° C. Red.

	Mill A.	Mill B.	Mill C.	Mill D.	Mill E.	Mill F.
Water entering humidifiers,	0	14	12	30	35	3
Unevaporated water after passing through humidifiers,	2	0	5	28	28	0
Effluent water filters as returned to humidifiers,	–	1	12	28	37	2
Water used to replenish supply,	0	252	10	60	0	28

Mill A, cloth-filter humidifiers operated with city water.
Mills C and E, city water used to replace water evaporated from spray humidifiers.
Mills B and D, river water used to replace water evaporated from spray humidifiers.
Mill F, river water after filtration through high-rate filter used to replace water evaporated from spray humidifiers.

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TABLE OF CONTENTS.

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The State Board of Publication.

RETURNS OF DISEASES.

Cases of Diseases declared by the State Board of Health to be Dangerous to the Public Health.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending —					
	Aug. 2.	Aug. 9.	Aug. 16.	Aug. 23.	Aug. 30.	Total.
Diphtheria,	43	64	79	61	73	320
Measles,	38	69	72	35	37	251
Scarlet fever,	27	38	52	29	50	196
Typhoid fever,	24	68	82	87	113	374
Tuberculosis, pulmonary (or not classified),	95	124	130	131	111	591
Tuberculous meningitis,	4	3	4	3	4	18
Tuberculosis, other forms,	5	4	6	5	9	29
Cerebro-spinal meningitis,	1	7	1	3	2	14
Whooping cough,	34	65	45	48	56	248
Varicella,	8	14	5	6	8	41
Ophthalmia neonatorum,	29	50	40	43	41	203
Anterior poliomyelitis,	1	7	10	17	25	60
Smallpox,	1	–	3	–	3	7
Trachoma,	–	2	2	3	3	10
Tetanus,	–	1	–	1	–	2
Malignant pustule,	–	–	1	–	–	1

Cases of Infectious Diseases not included in the Above Table.

[Cases not notifiable under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending —					
	Aug. 2.	Aug. 9.	Aug. 16.	Aug. 23.	Aug. 30.	Total.
Mumps,	–	1	1	–	–	2
Malaria,	–	–	1	–	–	1
Tonsillitis,	–	–	–	1	–	1

RETURNS OF DEATHS.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Cities and Towns of More than 10,000 Population.

[Under the provisions of chapter 210, Acts of 1913.]

Week ending Aug. 2, 1913.

Cities and Towns.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tubercular Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	{ 25[1] { 29[2]	19[1] 19[2]	3[1] 4[2]	– 1[2]	1[1] 1[2]	– 2[2]	1[1] 1[2]	– –	– –	1[1] 1[2]
Worcester,	145,986	8	4	–	–	1	1	–	1	1	–
Fall River,	119,295	–	–	–	–	–	–	–	–	–	–
Lowell,	106,294	6	2	1	–	–	–	–	1	–	2
Cambridge,	104,839	4	4	–	–	–	–	–	–	–	–
New Bedford,	96,652	5	3	–	–	1	1	–	–	–	–
Lynn,	89,336	1	–	–	1	–	–	–	–	–	–
Springfield,	88,926	1	–	–	–	–	–	–	–	1	–
Lawrence,	85,892	1	–	–	–	–	–	–	–	1	–
Somerville,	77,236	1	1	–	–	–	–	–	–	–	–
Holyoke,	57,730	6	4	2	–	–	–	–	–	–	–
Brockton,	56,878	–	–	–	–	–	–	–	–	–	–
Malden,	44,404	1	1	–	–	–	–	–	–	–	–
Haverhill,	44,115	–	–	–	–	–	–	–	–	–	–
Salem,	43,697	1	1	–	–	–	–	–	–	–	–
Newton,	39,806	4	2	–	–	–	2	–	–	–	–
Fitchburg,	37,826	1	1	–	–	–	–	–	–	–	–
Taunton,	34,259	–	–	–	–	–	–	–	–	–	–
Everett,	33,484	1	–	–	–	–	–	–	–	–	1
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	1	1	–	–	–	–	–	–	–	–
Pittsfield,	32,121	1	–	–	–	–	1	–	–	–	–
Waltham,	27,834	1	1	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	1	–	–	–	–	–	1	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	1	–	1	–	–	–	–	–	–	–
Northampton,	19,431	1[3]	–	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	1	1	–	–	–	–	–	–	–	–
Leominster,	17,580	1	–	–	–	–	1	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	3	3	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	1	1	–	–	–	–	–	–	–	–
Clinton,	13,075	1	–	1	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	1	1	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,988,142	84	50	9	2	3	8	2	2	3	4

[1] Nonresidents deducted. [2] Total deaths. [3] One death from anterior poliomyelitis.

Week ending Aug. 9, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tubercular Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	33[3]	22[1]	2[1]	–	3[1]	2[1]	–	–	1[1]	–
		37[4]	24[2]	3[2]	1[2]	3[2]	2[2]	–	–	1[2]	–
Worcester,	145,986	5	1	–	2	1	–	–	–	1	–
Fall River,	119,295	–	–	–	–	–	–	–	–	–	–
Lowell,	106,294	4	2	–	–	–	–	1	–	–	1
Cambridge,	104,839	1	–	–	1	–	–	–	–	–	–
New Bedford,	96,652	5	2	1	–	–	–	–	–	1	1
Lynn,	89,336	–	–	–	–	–	–	–	–	–	–
Springfield,	88,926	3	1	–	–	–	2	–	–	–	–
Lawrence,	85,892	3	2	–	–	–	1	–	–	–	–
Somerville,	77,236	–	–	–	–	–	–	–	–	–	–
Holyoke,	57,730	4	1	1	–	–	–	1	1	–	–
Brockton,	56,878	4	1	–	–	2	–	–	1	–	–
Malden,	44,404	1	–	–	1	–	–	–	–	–	–
Haverhill,	44,115	1	–	–	1	–	–	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	2	1	–	–	1	–	–	–	–	–
Fitchburg,	37,826	1	–	1	–	–	–	–	–	–	–
Taunton,	34,259	3	1	–	–	–	1	1	–	–	–
Everett,	33,484	–	–	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	1	–	–	–	–	–	–	–	–	1
Pittsfield,	32,121	2	–	1	–	–	–	1	–	–	–
Waltham,	27,834	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	1	1	–	–	–	–	–	–	–	–
Chicopee,	25,401	1	–	–	–	–	–	1	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	1	1	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	1	1	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	1	1	–	–	–	–	–	–	–	–
Peabody,	15,721	1	–	–	1	–	–	–	–	–	–
Melrose,	15,715	1	–	–	1	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	–	1	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	2	1	–	–	–	–	–	–	–	1
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	2	1	1	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	2	2	–	–	–	–	–	–	–	–
Greenfield,	10,427	1	–	–	–	1	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,895,181	92	44	9	8	8	6	5	2	3	4

[1] Non-residents deducted.
[2] Total deaths.
[3] Non-residents deducted. Two deaths from anterior poliomyelitis; 1 death from tetanus.
[4] Total deaths. Two deaths from anterior poliomyelitis; 1 death from tetanus.

Week ending Aug. 16, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tubercular Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	21[1] 25[2]	16[1] 18[2]	– –	1[1] 1[2]	1[1] 1[2]	2[1] 2[2]	– –	– –	2[1] 3[2]	– –
Worcester,	145,986	3	2	1	–	–	–	–	–	–	–
Fall River,	119,295	2	2	–	–	–	–	–	–	–	–
Lowell,	106,294	4[3]	2	–	–	1	–	–	–	–	–
Cambridge,	104,839	2	1	–	–	–	–	–	–	1	–
New Bedford,	96,652	5	2	1	–	–	1	–	–	–	1
Lynn,	89,336	–	–	–	–	–	–	–	–	–	–
Springfield,	88,926	4[3]	3	–	–	–	–	–	–	–	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	3	2	–	–	–	1	–	–	–	–
Holyoke,	57,730	3	1	–	1	–	–	–	1	–	–
Brockton,	56,878	1	–	–	–	1	–	–	–	–	–
Malden,	44,404	–	–	–	–	–	–	–	–	–	–
Haverhill,	44,115	1	1	–	–	–	–	–	–	–	–
Salem,	43,697	1	–	–	–	1	–	–	–	–	–
Newton,	39,806	1	–	1	–	–	–	–	–	–	–
Fitchburg,	37,826	1	–	1	–	–	–	–	–	–	–
Taunton,	34,259	1	–	1	–	–	–	–	–	–	–
Everett,	33,484	1	1	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	–	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	2	1	1	–	–	–	–	–	–	–
Waltham,	27,834	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	1	1	–	–	–	–	–	–	–	–
Chicopee,	25,401	2	–	–	–	–	–	2	–	–	–
Gloucester,	24,398	1	–	–	–	–	–	–	–	1	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	1	–	–	1	–	–	–	–	–	–
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	1[4]	–	–	–	–	–	–	–	–	–
Revere,	18,219	1	1	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	1	1	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	1	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	1	1	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,985,656	70	41	6	3	4	4	2	1	5	1

[1] Nonresidents deducted.
[2] Total deaths.
[3] One death from anterior poliomyelitis.
[4] One death from tetanus.

Week ending Aug. 23, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tubercular Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	21[3] / 24[4]	14[1] / 15[2]	1[1] / 3[2]	– / –	2[1] / 2[2]	– / –	– / –	1[1] / 1[2]	1[1] / 1[2]	– / –
Worcester,	145,986	2	1	–	–	1	–	–	–	–	–
Fall River,	119,295	9	6	–	1	–	–	–	–	2	–
Lowell,	106,294	3	1	2	–	–	–	–	–	–	–
Cambridge,	104,839	2	2	–	–	–	–	–	–	–	–
New Bedford,	96,652	1	1	–	–	–	–	–	–	–	–
Lynn,	89,336	1	–	–	–	–	1	–	–	–	–
Springfield,	88,926	7	1	1	–	2	3	–	–	–	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	2	–	1	–	1	–	–	–	–	–
Holyoke,	57,730	1	–	–	–	–	–	1	–	–	–
Brockton,	56,878	1	–	–	–	–	–	–	–	1	–
Malden,	44,404	1	1	–	–	–	–	–	–	–	–
Haverhill,	44,115	2	2	–	–	–	–	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	1	1	–	–	–	–	–	–	–	–
Taunton,	34,259	1[5]	–	–	–	–	–	–	–	–	–
Everett,	33,484	3	2	–	–	–	–	–	–	–	1
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	1	–	–	–	–	–	–	–	1	–
Pittsfield,	32,121	4	–	1	–	–	1	1	–	–	1
Waltham,	27,834	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	–	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	1	1	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	1	1	–	–	–	–	–	–	–	–
Peabody,	15,721	1	1	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	2	–	–	–	–	1	–	–	–	1
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	1	–	–	–	–	–	–	–	–	1
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,966,798	72	36	8	1	6	6	2	1	5	4

[1] Non-residents deducted.
[2] Total deaths.
[3] Non-residents deducted. One death from anterior poliomyelitis; one death from trachoma.
[4] Total deaths. One death from anterior poliomyelitis; one death from trachoma.
[5] One death from anterior poliomyelitis.

Week ending Aug. 30, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tubercular Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	32[1] 34[2]	24[1] 24[2]	3[1] 3[2]	1[1] 1[2]	1[1] 1[2]	1[1] 1[2]	–	2[1] 2[2]	2[1] 2[2]	–
Worcester,	145,986	1	–	–	1	–	–	–	–	–	–
Fall River,	119,295	2	1	–	–	–	–	–	–	–	1
Lowell,	106,294	4	2	1	–	1	–	–	–	–	–
Cambridge,	104,839	6	6	–	–	–	–	–	–	–	–
New Bedford,	96,652	1	1	–	–	–	–	–	–	–	–
Lynn,	89,336	5	3	–	–	1	–	–	–	1	–
Springfield,	88,926	3	–	–	–	–	2	–	–	1	–
Lawrence,	85,892	7[3]	3	2	1	–	–	–	–	–	–
Somerville,	77,236	4	3	–	–	–	1	–	–	–	–
Holyoke,	57,730	–	–	–	–	–	–	–	–	–	–
Brockton,	56,878	–	–	–	–	–	–	–	–	–	–
Malden,	44,404	1	–	–	–	–	–	–	–	1	–
Haverhill,	44,115	3[4]	2	–	–	–	–	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	1	–	1	–	–	–	–	–	–	–
Fitchburg,	37,826	1	1	–	–	–	–	–	–	–	–
Taunton,	34,259	–	–	–	–	–	–	–	–	–	–
Everett,	33,484	1	1	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	2	–	–	–	–	–	–	–	2	–
Pittsfield,	32,121	2	2	–	–	–	–	–	–	–	–
Waltham,	27,834	1	1	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	1	–	–	–	1	–	–	–	–	–
Gloucester,	24,398	1	1	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	3	3	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	3	2	–	–	–	–	–	–	1	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	1	1	–	–	–	–	–	–	–	–
Peabody,	15,721	1	–	–	–	–	1	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	1	1	–	–	–	–	–	–	–	–
Clinton,	13,075	2	1	1	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	1	1	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	1	1	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,063,854	94	61	8	3	4	5	–	2	8	1

[1] Nonresidents deducted.

[2] Total deaths.

[3] One death from tetanus.

[4] One death from anterior poliomyelitis.

DEATHS FROM DISEASES DECLARED BY THE STATE BOARD OF HEALTH TO BE DANGEROUS TO THE PUBLIC HEALTH IN TOWNS OF LESS THAN 10,000 POPULATION.

[Under the provisions of chapter 210, Acts of 1913.]

DISEASE.	Place.	Week ending — Aug. 2.	Aug. 9.	Aug. 16.	Aug. 23.	Aug. 30.
Tuberculosis, pulmonary (or not classified),	Attleborough,	–	–	–	2	–
	Blackstone,	–	–	1	1	1
	Dalton,	–	–	–	–	1
	Danvers,	–	–	1	–	–
	Douglas,	–	–	–	1	–
	Freetown,	–	–	1	–	–
	Grafton,	–	1	1	–	–
	Hanover,	–	–	–	–	1
	Marblehead,	1	–	–	–	1
	Medfield,	–	–	2	1	–
	Merrimac,	–	–	1	–	–
	North Andover,	–	–	–	1	–
	Northbridge,	–	–	–	–	2
	Palmer,	–	–	1	2	–
	South Hadley,	–	–	–	–	1
	Spencer,	–	1	–	–	–
	Ware,	1	–	–	–	–
	Wareham,	1	–	–	–	–
	Warren,	–	1	–	–	–
Total,	. . . . .	3	3	8	8	7
Tuberculous meningitis,	Northbridge,	–	–	–	–	2
	Palmer,	–	1	–	–	–
	Spencer,	–	1	–	–	–
Total,	. . . . .	–	2	–	–	2
Tuberculosis, other forms,	Boxborough,	–	–	–	–	1
	Bridgewater,	1	–	–	–	–
	Easthampton,	–	1	–	–	–
	Ipswich,	–	–	–	–	1
	Provincetown,	1	–	–	–	1
	Ware,	1	–	1	–	–
Total,	. . . . .	3	1	1	–	3
Diphtheria,	Acton,	1	–	–	–	–
	Falmouth,	–	–	–	–	1
	Hatfield,	–	–	–	–	1
	Truro,	–	1	–	–	–
	Ware,	–	–	1	–	–
Total,	. . . . .	1	1	1	–	2

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Towns of Less than 10,000 Population — *Concluded.*

DISEASE.	Place.	Week ending — Aug. 2.	Aug. 9.	Aug. 16.	Aug. 23.	Aug. 30.
Typhoid, . . .	Barnstable, .	–	–	1	–	–
	Palmer, . .	–	–	–	1	–
	Rowley, . .	–	–	–	–	1
	Stow, . .	–	1	–	–	–
	Wareham, .	–	1	–	–	–
	Warren, . .	–	1	–	–	–
Total, . .	. . . . .	–	3	1	1	1
Whooping cough, .	Amherst, .	1	–	–	–	–
	Bridgewater, .	–	1	–	–	–
	Danvers, .	1	–	–	–	–
	Norwood, .	1	–	–	–	–
Total, . .	. . . . .	3	1	–	–	–
Cerebro-spinal meningitis, . . .	Amherst, .	–	1	–	–	–
	Rockland, .	–	–	1	–	–
Total, . .	. . . . .	–	1	1	–	–
Scarlet fever, . .	Franklin, .	–	–	1	1	–
	Rockland, .	–	–	1	–	1
	Sunderland, .	–	–	–	1	–
Total, . .	. . . . .	–	–	2	2	1
Measles, . . .	Gt. Barrington,	–	1	–	–	–
	Wareham, .	–	–	1	2	–
Total, . .	. . . . .	–	1	1	2	–

REPORT ON INSPECTION OF FOOD AND DRUGS.

Laboratory Examinations of Food and Drugs.

The following summary presents the results of the laboratory examinations during the month of August, 1913, of samples of food and drugs collected by inspectors of the Board: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Cider,	–	1	1	Milk,	248	183	431
Coffee,	–	1	1	Molasses,	1	–	1
College ices,	6	1	7	Non-alcoholic drinks,	16	–	16
Confectionery,	2	–	2	Olive oil,	3	–	3
Cream,	5	1	6	Soda water syrups,	29	30	59
Drugs,	40	7	47	Total,	409	230	639
Grape juice,	5	–	5				
Ice cream,	48	6	54				
Jelly,	1	–	1				
Lime juice,	5	–	5				

The samples of drugs found to be adulterated were spirit of peppermint and tincture of iodine.

The cities and towns in which samples were collected were: Abington, Bedford, Billerica, Boston, Braintree, Carlisle, Chelsea, Concord, Dedham, Everett, Franklin, Gloucester, Haverhill, Hingham, Lawrence, Lincoln, Littleton, Lowell, Lynn, Malden, Mendon, Milford, Millis, Nantucket, Natick, New Bedford, North Andover, Norwood, Oak Bluffs, Pittsfield, Quincy, Revere, Somerville, Spencer, Waltham, Warren, Weston, Weymouth, Winthrop, Woburn.

Prosecutions for Violations of the Law relating to Food and Drugs.

Six convictions were secured during the month of August, 1913, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Patrick Britt,	Lexington,	Milk (total solids, 11.08).[1,3]
2	George Wheeler,	Lincoln,	Milk (total solids, 10.80).[2]
3	Howard H. Trask,	Revere,	Milk (total solids, 10.90).[3]
4	Joseph A. Atwater,	Gloucester,	Milk (total solids, 10.70).[2]
5	F. W. Piercy,	Braintree,	Milk (total solids, 10.67).[1,2]
6	H. L. Ewen,	Nantucket,	Milk (total solids, 10.46).[2]

[1] Appealed. [2] Watered. [3] Skimmed.

Fines imposed, $202.75.

List of Adulterated or Improperly Labeled Foods, etc., for August, 1913.

The following shows the adulterated or improperly labeled foods during the month of August, 1913: —

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
3114–R	Spirit of peppermint,	The Lynch Drug Company, Cambridge, Mass.,	71 per cent. of U. S. P. strength.
3122–R	Spirit of peppermint,	T. H. O'Donnell & Co., Cambridge, Mass.,	59 per cent. of U. S. P. strength.
3140–R	Milk,	H. L. Ewen, Nantucket, Mass.,	Total solids, 10.46 per cent.; fat, 3.60 per cent.; contained added water.
3196–R	Milk,	Augustus Boucher, Franklin, Mass.,	Total solids, 10.76 per cent.; fat, 3.50 per cent.; contained added water.
3200–R			Total solids, 11.30 per cent.; fat, 3.80 per cent.; contained added water.
4123–S	Milk,	George Wheeler, Lincoln, Mass.,	Total solids, 10.80 per cent.; fat, 3.10 per cent.; contained added water.
4127–S			Total solids, 11.26 per cent.; fat, 3.60 per cent.; contained added water.
q 11904	Milk,	Ralph W. Coffin, Mendon, Mass.,	Total solids, 11.60 per cent.; fat, 3.40 per cent.; contained added water.
q 11905			Total solids, 10.72 per cent.; fat, 3.10 per cent.; contained added water.
q 11916	Milk,	Charles Higgins, Hopkinton, Mass.,	Total solids, 12.20 per cent.; fat, 3.80 per cent.; contained added water.
q 11917			Total solids, 12.00 per cent.; fat, 3.90 per cent.; contained added water.
4105–S	Milk,	Fred O. Farrington, Dedham, Mass.,	Total solids, 10.26 per cent.; fat, 2.90 per cent.; contained added water.
4109–S			Total solids, 11.04 per cent.; fat, 3.40 per cent.; contained added water.
4113–S			Total solids, 11.60 per cent.; fat, 3.80 per cent.; contained added water.
3318–R	Milk,	George Wilson, Cohasset, Mass.,	Total solids, 11.20 per cent.; fat, 3.60 per cent.; contained added water.
3326–R	Milk,	George W. Burgess, Hingham, Mass.,	Total solids, 10.78 per cent.; fat, 3.00 per cent.; contained added water.
3328–R			Total solids, 10.88 per cent.; fat, 2.90 per cent.; contained added water.

4239–S	Milk,	Alvin L. Dudley, Weston, Mass.,	Total solids, 11.56 per cent.; fat, 3.50 per cent.; contained added water.
4241–S			Total solids, 10.86 per cent.; fat, 3.20 per cent.; contained added water.
4243–S			Total solids, 11.08 per cent.; fat, 3.20 per cent.; contained added water.
4245–S			Total solids, 10.52 per cent.; fat, 3.20 per cent.; contained added water.
4247–S			Total solids, 10.90 per cent.; fat, 3.30 per cent.; contained added water.
4249–S			Total solids, 10.86 per cent.; fat, 3.40 per cent.; contained added water.
4251–S			Total solids, 10.36 per cent.; fat, 3.20 per cent.; contained added water.
4253–S			Total solids, 10.64 per cent.; fat, 3.00 per cent.; contained added water.
4255–S			Total solids, 10.70 per cent.; fat, 3.10 per cent.; contained added water.
4257–S			Total solids, 10.64 per cent.; fat, 3.10 per cent.; contained added water.
4259–S			Total solids, 10.68 per cent.; fat, 3.00 per cent.; contained added water.
4261–S			Total solids, 10.58 per cent.; fat, 3.00 per cent.; contained added water.

QUARTERLY REPORT ON THE BUSINESS OF SLAUGHTERING AND MEAT INSPECTION.

The quarterly report upon the work of slaughtering and meat inspection during the months of April, May and June, 1913, inclusive, has been rendered to the State Board of Health by the inspectors of slaughtering in the various cities and towns throughout the Commonwealth. The result of these inspections may be found in the following tables, which show the number and kinds of carcasses inspected, the condemnations, the reasons for condemnation, and the disposition of such carcasses.

During the quarter, two prosecutions were made on account of inspector not being present at time of slaughter and the meat not being stamped. Both cases were followed by convictions, and the licenses for slaughtering were revoked.

Where a blank space appears it indicates that no report has been rendered by the inspector of slaughtering for such city or town; or that an inspector of slaughtering has not been nominated by the local board of health, or has not been approved by the State Board of Health.

Quarterly Report on Slaughtering Inspection, April 1–June 30, 1913.

Cities and Towns.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Abington,	–	16	7	–	– –	– –	– –
Acton,	431	164	21	6	29 cattle, 10 calves.	28 tuberculosis, 1 bruised, 10 immature.	29 rendered, 10 fed to hogs.
Acushnet,	11	62	40	–	1 cow.	1 tuberculosis.	1 rendered.
Adams,	–	–	–	–	– –	– –	– –
Agawam,	–	–	–	–	– –	– –	– –
Alford,	–	5	–	–	– –	– –	– –
Amesbury,	6	40	13	–	1 cow.	1 tuberculosis.	1 rendered.

Amherst, . . .	62	146	14	4	5 cattle, 8 calves.	5 tuberculosis, 8 immature.	13 buried.
Andover, . . .	1	4	97	–	– –	– –	– –
Arlington, . . .	–	598	–	–	10 calves.	10 immature.	10 rendered.
Ashburnham, . .	–	18	20	–	– –	– –	– –
Ashby, ...	–	–	–	–	– –	– –	– –
Ashfield, . . .	20	3	12	20	– –	– –	– –
Ashland, . . .	12	27	40	–	2 hogs.	2 tuberculosis.	2 rendered.
Athol, ...	9	17	54	1	1 cow.	1 tuberculosis.	1 rendered.
Attleborough, . .	50	75	17	–	1 cow.	1 tuberculosis.	1 buried.
Auburn, . . .	30	32	31	1	2 cattle.	1 tuberculosis, 1 pneumonia.	2 rendered.
Avon, ...	–	–	–	–	– –	– –	– –
Ayer, ...	–	–	–	–	– –	– –	– –
Barnstable, . . .	2	33	20	–	– –	– –	– –
Barre, ...	–	3	–	–	– –	– –	– –
Becket, ...	1	4	4	–	– –	– –	– –
Bedford, . . .	–	–	–	–	– –	– –	– –
Belchertown, . . .	2	160	46	–	– –	– –	– –
Bellingham, . . .	–	–	6	–	– –	– –	– –
Belmont, . . .	–	–	223	–	– –	– –	– –
Berkley, . . .	–	–	–	–	– –	– –	– –
Berlin, ...	–	–	–	–	– –	– –	– –
Bernardston, . . .	–	–	–	–	– –	– –	– –
BEVERLY, . . .	–	–	–	–	– –	– –	– –
Billerica, . . .	15	45	27	–	1 cow, 3 calves, 1 hog.	2 tuberculosis, 3 immature.	5 rendered.
Blackstone, . . .	–	–	–	–	– –	– –	– –
Blandford, . . .	1	30	24	2	– –	– –	– –
Bolton, ...	–	–	–	–	– –	– –	– –
Bourne, . . .	–	–	–	–	– –	– –	– –
Boxborough, . . .	–	–	–	–	– –	– –	– –
Boxford, . . .	2	21	31	–	– –	– –	– –
Boylston, . . .	11	44	28	–	– –	– –	– –
Braintree, . . .	2	60	15	–	1 cow.	1 tuberculosis.	1 rendered.
Brewster, . . .	–	18	–	6	– –	– –	– –
Bridgewater, . . .	–	–	–	–	– –	– –	– –
Brimfield, . . .	–	–	–	–	– –	– –	– –
BROCKTON, . . .	5	2	12	–	1 cow.	1 abcesses.	1 rendered.
Brookfield, . . .	–	9	11	–	– –	– –	– –

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, APRIL 1–JUNE 30, 1913 — *Continued.*

CITIES AND TOWNS.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Brookline,	–	–	–	–	– –	– –	– –
Buckland,	–	–	–	–	– –	– –	– –
Burlington,	–	–	–	–	– –	– –	– –
CAMBRIDGE,	–	–	–	–	– –	– –	– –
Canton,	–	–	–	–	– –	– –	– –
Carlisle,	6	19	13	–	1 calf.	1 immature.	1 fed to hens.
Carver,	–	12	3	–	– –	– –	– –
Charlemont,	5	6	31	1	– –	– –	– –
Charlton,	53	185	51	1	1 cow, 5 hogs.	6 tuberculosis.	6 buried.
Chatham,	–	–	6	–	– –	– –	– –
Chelmsford,	361	322	159	2	13 cattle, 2 calves, 7 hogs.	13 tuberculosis, 2 immature, 7 hog cholera.	22 rendered.
CHELSEA,	–	–	–	–	– –	– –	– –
Cheshire,	13	9	4	–	– –	– –	– –
Chester,	–	17	1	–	– –	– –	– –
Chesterfield,	9	30	38	–	– –	– –	– –
CHICOPEE,	–	2	30	6	3 hogs.	3 tuberculosis.	3 buried.
Chilmark,	–	–	–	–	– –	– –	– –
Clarksburg,	2	6	–	–	– –	– –	– –
Clinton,	5	105	123	–	1 calf.	1 immature.	1 rendered.
Cohasset,	–	1	2	–	– –	– –	– –
Colrain,	17	2	74	–	– –	– –	– –
Concord,	–	–	–	–	– –	– –	– –
Conway,	–	–	–	–	– –	– –	– –
Cummington,	10	20	96	–	– –	– –	– –
Dalton,	–	–	–	–	– –	– –	– –
Dana,	–	–	–	–	– –	– –	– –
Danvers,	–	105	–	–	– –	– –	– –
Dartmouth,	16	166	42	–	1 cow.	1 tuberculosis.	1 rendered.
Dedham,	8	200	21	3	2 cattle, 10 calves, 1 hog.	2 tuberculosis, 10 immature, 1 hog cholera.	13 rendered.
Deerfield,	16	32	93	7	– –	– –	– –

Dennis,	–	17	2	–	– –	– –	– –
Dighton,	19	109	15	–	– –	– –	– –
Douglas,	–	–	–	–	– –	– –	– –
Dover,	–	–	–	–	– –	– –	– –
Dracut,	53	52	48	–	4 calves, 1 hog.	2 immature, 2 inspector not present, 1 tuberculosis.	4 rendered, 1 buried.
Dudley,	26	84	58	3	2 cattle.	2 tuberculosis.	2 buried.
Dunstable,	–	2	7	–	– –	– –	– –
Duxbury,	–	16	8	–	– –	– –	– –
East Bridgewater,	–	–	–	–	– –	– –	– –
East Longmeadow,	7	3	22	–	1 cow.	1 tuberculosis.	1 buried.
Eastham,	–	15	–	–	– –	– –	– –
Easthampton,	2	198	4	–	– –	– –	– –
Easton,	14	63	15	–	– –	– –	– –
Edgartown,	–	35	9	23	– –	– –	– –
Egremont,	–	–	–	–	– –	– –	– –
Enfield,	3	201	26	7	– –	– –	– –
Erving,	–	–	–	–	– –	– –	– –
Essex,	–	–	–	–	– –	– –	– –
EVERETT,	–	–	–	–	– –	– –	– –
Fairhaven,	185	246	3	1	5 cattle, 16 calves.	5 tuberculosis, 16 immature.	21 rendered.
FALL RIVER,	–	–	2	–	– –	– –	– –
Falmouth,	–	–	–	–	– –	– –	– –
FITCHBURG,	178	239	35	–	1 cow, 1 calf.	1 pericarditis, 1 injured.	2 rendered.
Florida,	2	–	5	4	– –	– –	– –
Foxborough,	1	7	–	–	– –	– –	– –
Framingham,	78	112	–	2	1 cow, 4 calves.	1 tuberculosis, 4 immature.	5 rendered.
Franklin,	2	30	110	–	– –	– –	– –
Freetown,	2	9	5	–	1 cow.	1 tuberculosis.	1 buried.
Gardner,	–	–	–	–	– –	– –	– –
Gay Head,	–	–	–	–	– –	– –	– –
Georgetown,	–	–	–	–	– –	– –	– –
Gill,	6	18	20	–	– –	– –	– –
GLOUCESTER,	1	101	4	–	6 calves.	6 immature.	6 rendered.
Goshen,	–	–	–	–	– –	– –	– –
Gosnold,	–	–	–	1	– –	– –	– –

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, APRIL 1–JUNE 30, 1913 — *Continued.*

CITIES AND TOWNS.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Grafton,	–	–	–	–	– –	– –	– –
Granby,	143	247	8	1	5 cattle, 1 calf, 1 hog.	5 tuberculosis, 1 dropsy, 1 immature.	7 buried.
Granville,	–	–	–	–	– –	– –	– –
Great Barrington,	–	29	–	2	– –	– –	– –
Greenfield,	25	103	20	361	– –	– –	– –
Greenwich,	4	17	23	5	– –	– –	– –
Groton,	–	39	24	–	– –	– –	– –
Groveland,	–	3	–	–	– –	– –	– –
Hadley,	–	–	–	–	– –	– –	– –
Halifax,	–	–	–	–	– –	– –	– –
Hamilton,	–	–	–	–	– –	– –	– –
Hampden,	–	73	19	–	– –	– –	– –
Hancock,	–	–	–	–	– –	– –	– –
Hanover,	–	25	32	2	3 hogs.	3 hepatitis.	3 buried.
Hanson,	–	–	–	–	– –	– –	– –
Hardwick,	–	4	3	–	– –	– –	– –
Harvard,	5	170	9	4	2 calves.	2 immature.	2 fed to hens.
Harwich,	–	–	–	–	– –	– –	– –
Hatfield,	14	132	78	–	– –	– –	– –
HAVERHILL,	8	52	14	–	– –	– –	– –
Hawley,	10	1	7	–	– –	– –	– –
Heath,	–	–	1	–	– –	– –	– –
Hingham,	–	–	–	–	– –	– –	– –
Hinsdale,	–	–	–	–	– –	– –	– –
Holbrook,	–	–	–	–	– –	– –	– –
Holden,	–	–	–	–	– –	– –	– –
Holland,	–	–	–	–	– –	– –	– –
Holliston,	–	–	–	–	– –	– –	– –
HOLYOKE,	5	22	7	–	1 cow.	1 tuberculosis.	1 rendered.
Hopedale,	–	–	–	–	– –	– –	– –
Hopkinton,	–	4	8	–	– –	– –	– –
Hubbardston,	5	57	22	–	– –	– –	– –

Hudson,	2	5	33	–	–	–	–
Hull,	–	–	–	–	–	–	–
Huntington,	3	14	20	17	–	–	–
Ipswich,	4	7	21	–	1 cow, 2 hogs.	1 tuberculosis, 2 hog cholera.	3 rendered.
Kingston,	1	11	5	–	1 hog.	1 emaciated.	1 buried.
Lakeville,	1	–	1	–	–	–	–
Lancaster,	–	4	2	–	–	–	–
Lanesborough,	–	–	–	–	–	–	–
LAWRENCE,	59	–	144	–	2 cattle, 3 hogs.	2 tuberculosis, 1 emaciated, 1 bruised, 1 blood poison.	5 rendered.
Lee,	5	5	7	–	2 cattle.	2 tuberculosis.	2 buried.
Leicester,	6	90	21	–	–	–	–
Lenox,	73	4	16	–	1 calf.	1 parturient fever.	1 buried.
Leominster,	25	112	97	–	1 cow, 4 calves, 3 hogs.	4 tuberculosis, 4 immature.	8 rendered.
Leverett,	–	–	–	–	–	–	–
Lexington,	33	838	263	25	20 calves.	5 immature, 15 bruised.	5 fed to hens, 15 rendered.
Leyden,	6	4	21	–	–	–	–
Lincoln,	–	–	–	–	–	–	–
Littleton,	–	–	–	–	–	–	–
Longmeadow,	–	1	–	–	–	–	–
LOWELL,	–	–	42	–	–	–	–
Ludlow,	–	468	20	1	–	–	–
Lunenburg,	73	203	132	4	5 cattle.	5 tuberculosis.	5 rendered.
LYNN,	130	108	15	–	4 cattle, 3 calves, 1 hog.	5 tuberculosis, 3 immature.	8 rendered.
Lynnfield,	174	183	–	–	2 cattle, 8 calves.	2 tuberculosis, 8 immature.	10 rendered.
MALDEN,	–	–	–	–	–	–	–
Manchester,	–	–	–	–	–	–	–
Mansfield,	12	5	41	3	–	–	–
Marblehead,	–	–	6	–	–	–	–
Marion,	–	–	–	–	–	–	–
MARLBOROUGH,	2	44	16	9	1 cow.	1 tuberculosis.	1 rendered.
Marshfield,	–	8	2	–	–	–	–

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, APRIL 1–JUNE 30, 1913 — *Continued.*

Cities and Towns.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Mashpee,	–	–	–	–	– –	– –	– –
Mattapoisett,	1	9	14	–	1 cow.	1 tuberculosis.	1 buried.
Maynard,	–	9	8	11	1 hog.	1 tuberculosis.	1 buried.
Medfield,	–	3	–	–	– –	– –	– –
MEDFORD,	–	–	–	–	– –	– –	– –
Medway,	14	45	1	–	– –	– –	– –
MELROSE,	–	–	–	–	– –	– –	– –
Mendon,	–	–	–	–	– –	– –	– –
Merrimac,	–	–	–	–	– –	– –	– –
Methuen,	–	–	–	–	– –	– –	– –
Middleborough,	3	24	3	–	– –	– –	– –
Middlefield,	–	–	–	–	– –	– –	– –
Middleton,	–	–	–	–	– –	– –	– –
Milford,	62	107	59	–	1 cow, 5 calves.	1 bruised, 5 immature.	6 buried.
Millbury,	–	–	–	–	– –	– –	– –
Millis,	–	–	–	–	– –	– –	– –
Milton,	1	–	4	–	– –	– –	– –
Monroe,	–	–	–	–	– –	– –	– –
Monson,	–	–	–	–	– –	– –	– –
Montague,	3	30	31	–	– –	– –	– –
Monterey,	–	–	–	–	– –	– –	– –
Montgomery,	–	–	–	–	– –	– –	– –
Mount Washington,	–	–	–	–	– –	– –	– –
Nahant,	–	–	–	–	– –	– –	– –
Nantucket,	1	83	17	–	– –	– –	– –
Natick,	–	–	–	–	– –	– –	– –
Needham,	–	–	–	–	– –	– –	– –
New Ashford,	–	–	–	–	– –	– –	– –
NEW BEDFORD,	56	188	99	–	2 cattle, 3 calves.	2 tuberculosis, 3 immature.	5 rendered.
New Braintree,	11	74	2	–	– –	– –	– –
New Marlborough,	1	4	–	1	– –	– –	– –
New Salem,	5	21	29	–	– –	– –	– –
Newbury,	–	–	–	–	– –	– –	– –
NEWBURYPORT,	67	121	40	–	3 calves.	3 immature.	3 rendered.

NEWTON,	–	–	–	–	–	–	–
Norfolk,	–	–	–	–	–	–	–
NORTH ADAMS,	119	228	43	6	4 cattle, 1 calf.	4 tuberculosis, 1 immature.	5 rendered.
North Andover,	–	–	–	–	–	–	–
North Attleborough,	33	98	68	1	2 calves.	2 immature.	2 buried.
North Brookfield,	–	14	12	–	–	–	–
North Reading,	–	–	–	–	–	–	–
NORTHAMPTON,	9	55	29	–	–	–	–
Northborough,	2	4	3	–	–	–	–
Northbridge,	–	3	13	–	–	–	–
Northfield,	–	5	8	3	–	–	–
Norton,	–	8	3	–	–	–	–
Norwell,	–	–	–	–	–	–	–
Norwood,	–	87	9	–	–	–	–
Oak Bluffs,	–	–	–	–	–	–	–
Oakham,	–	45	–	–	–	–	–
Orange,	45	57	27	–	4 cattle, 13 hogs.	4 tuberculosis, 13 hog cholera.	17 buried.
Orleans,	2	12	5	–	–	–	–
Otis,	4	19	2	–	–	–	–
Oxford,	–	–	–	–	–	–	–
Palmer,	–	–	–	–	–	–	–
Paxton,	4	70	–	–	–	–	–
Peabody,	119	246	131	7	1 cow, 6 calves, 2 hogs.	2 tuberculosis, 5 immature, 2 hog cholera.	9 rendered.
Pelham,	–	–	–	–	–	–	–
Pembroke,	–	3	2	–	–	–	–
Pepperell,	–	–	–	–	–	–	–
Peru,	–	–	–	–	–	–	–
Petersham,	1	13	25	–	–	–	–
Phillipston,	3	16	9	–	–	–	–
PITTSFIELD,	–	–	–	–	–	–	–
Plainfield,	1	30	–	12	–	–	–
Plainville,	–	–	–	–	–	–	–
Plymouth,	18	56	24	2	3 calves.	3 immature.	3 buried.
Plympton,	–	–	–	–	–	–	–
Prescott,	1	–	1	–	–	–	–
Princeton,	1	35	37	1	–	–	–
Provincetown,	–	2	1	–	–	–	–

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, APRIL 1–JUNE 30, 1913 — *Continued.*

CITIES AND TOWNS.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
QUINCY,	–	–	–	–	– –	– –	– –
Randolph,	–	1	1	–	– –	– –	– –
Raynham,	5	37	9	4	1 cow.	1 tuberculosis.	1 buried.
Reading,	153	34	30	–	1 cow, 1 calf.	1 tuberculosis, 1 immature.	2 rendered.
Rehoboth,	27	103	16	–	2 cattle, 1 calf.	2 tuberculosis, 1 immature.	3 rendered.
Revere,	–	–	–	–	– –	– –	– –
Richmond,	–	–	–	–	– –	– –	– –
Rochester,	–	–	–	–	– –	– –	– –
Rockland,	–	–	–	–	– –	– –	– –
Rockport,	2	5	–	–	– –	– –	– –
Rowe,	8	2	17	–	– –	– –	– –
Rowley,	11	94	22	–	– –	– –	– –
Royalston,	–	–	–	–	– –	– –	– –
Russell,	–	–	–	–	– –	– –	– –
Rutland,	5	42	7	–	– –	– –	– –
SALEM,	–	1	27	–	– –	– –	– –
Salisbury,	–	–	–	–	– –	– –	– –
Sandisfield,	8	35	–	–	– –	– –	– –
Sandwich,	–	1	6	–	– –	– –	– –
Saugus,	–	–	9	–	– –	– –	– –
Savoy,	–	–	–	–	– –	– –	– –
Scituate,	–	12	–	–	– –	– –	– –
Seekonk,	–	–	–	–	– –	– –	– –
Sharon,	–	2	–	–	– –	– –	– –
Sheffield,	11	18	16	2	– –	– –	– –
Shelburne,	17	37	44	47	2 cattle.	2 tuberculosis.	2 rendered.
Sherborn,	2	29	2	–	2 cattle.	2 inspector not present.	2 rendered.
Shirley,	–	–	–	–	– –	– –	– –
Shrewsbury,	6	209	47	12	1 cow.	1 tuberculosis.	1 buried.
Shutesbury,	–	–	–	–	– –	– –	– –
Somerset,	4	–	19	1	– –	– –	– –
SOMERVILLE,	–	–	–	–	– –	– –	– –

South Hadley,	10	102	47	1	–	–	–
Southampton,	30	60	7	–	1 calf.	1 immature.	1 buried.
Southborough,	–	–	–	–	–	–	–
Southbridge,	23	35	33	–	1 calf.	1 immature.	1 rendered.
Southwick,	–	38	51	22	1 hog.	1 tuberculosis.	1 rendered.
Spencer,	7	65	28	–	–	–	–
SPRINGFIELD,	–	150	31	16	–	–	–
Sterling,	–	–	–	–	–	–	–
Stockbridge,	–	–	–	–	–	–	–
Stoneham,	–	–	–	–	–	–	–
Stoughton,	2	39	–	–	–	–	–
Stow,	–	–	–	–	–	–	–
Sturbridge,	36	236	22	14	–	–	–
Sudbury,	–	–	–	–	–	–	–
Sunderland,	–	–	–	–	–	–	–
Sutton,	1	53	13	–	–	–	–
Swampscott,	–	–	–	–	–	–	–
Swansea,	112	118	98	–	2 cattle.	2 tuberculosis.	2 rendered.
TAUNTON,	116	48	113	–	1 hog.	1 tuberculosis.	1 rendered.
Templeton,	–	12	15	–	–	–	–
Tewksbury,	141	128	37	1	4 cattle, 4 calves.	4 tuberculosis, 4 immature.	2 rendered, 6 buried.
Tisbury,	–	–	–	–	–	–	–
Tolland,	–	–	–	–	–	–	–
Topsfield,	–	54	39	1,243	1 calf.	1 immature.	1 rendered.
Townsend,	–	–	–	–	–	–	–
Truro,	–	–	–	–	–	–	–
Tyngsborough,	–	1	12	–	–	–	–
Tyringham,	–	3	3	–	–	–	–
Upton,	1	6	–	–	–	–	–
Uxbridge,	19	29	13	–	–	–	–
Wakefield,	–	–	–	–	–	–	–
Wales,	–	–	–	–	–	–	–
Walpole,	–	5	15	4	–	–	–
WALTHAM,	–	–	12	–	–	–	–
Ware,	–	–	–	–	–	–	–
Wareham,	–	–	–	–	–	–	–
Warren,	5	30	20	–	1 cow.	1 tuberculosis.	1 rendered.
Warwick,	–	–	–	–	–	–	–

Quarterly Report on Slaughtering Inspection, April 1–June 30, 1913 — *Concluded.*

Cities and Towns.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Washington,	1	38	12	–	– –	– –	– –
Watertown,	–	–	–	–	– –	– –	– –
Wayland,	–	3	10	–	– –	– –	– –
Webster,	1	19	54	–	– –	– –	– –
Wellesley,	–	–	–	–	– –	– –	– –
Wellfleet,	–	–	–	–	– –	– –	– –
Wendell,	–	–	–	–	– –	– –	– –
Wenham,	–	–	–	–	– –	– –	– –
West Boylston,	–	1	6	–	– –	– –	– –
West Bridgewater,	–	144	87	–	7 calves, 4 hogs.	7 immature, 4 tuberculosis.	6 rendered, 5 buried.
West Brookfield,	1	22	10	–	1 cow.	1 tuberculosis.	1 buried.
West Newbury,	–	–	–	–	– –	– –	– –
West Springfield,	–	–	–	–	– –	– –	– –
West Stockbridge,	–	46	–	–	– –	– –	– –
West Tisbury,	–	–	–	–	– –	– –	– –
Westborough,	3	15	8	–	– –	– –	– –
Westfield,	–	–	–	–	– –	– –	– –
Westford,	9	150	45	–	2 cattle, 2 calves, 1 hog.	2 tuberculosis, 2 immature, 1 hog cholera.	5 rendered.
Westhampton,	–	–	–	–	– –	– –	– –
Westminster,	–	1	2	–	– –	– –	– –
Weston,	6	204	–	–	3 cattle, 31 calves.	3 tuberculosis, 31 immature.	34 rendered.
Westport,	114	182	145	10	4 cattle.	4 tuberculosis.	4 rendered.
Westwood,	–	–	7	–	– –	– –	– –
Weymouth,	–	–	–	–	– –	– –	– –
Whately,	–	–	–	–	– –	– –	– –
Whitman,	–	–	–	–	– –	– –	– –
Wilbraham,	1	4	12	–	– –	– –	– –
Williamsburg,	–	–	–	–	– –	– –	– –
Williamstown,	–	–	–	–	– –	– –	– –
Wilmington,	10	116	111	–	– –	– –	– –
Winchendon,	–	–	–	–	– –	– –	– –
Winchester,	–	–	–	–	– –	– –	– –
Windsor,	–	–	–	–	– –	– –	– –

Winthrop,	–	–	–	–	–	–	–	–	–	–
Woburn,	–	19	382	–	–	–	–	–	–	–
Worcester,	572	523	357	11	13 cattle, 6 calves.		13 tuberculosis, 6 immature.		19 rendered.	
Worthington,	4	19	18	–	–	–	–	–	–	–
Wrentham,	–	4	8	–	–	–	–	–	–	–
Yarmouth,	–	–	–	–	–	–	–	–	–	–

In addition to the above, 3 goats were inspected, 1 in Brockton and 2 in Chelmsford; also, 1 heifer in Hinsdale.

Summary.

Total number of carcasses inspected,			25,486
(a) Cattle,	4,672		
(b) Calves,	12,732		
(c) Hogs,	6,112		
(d) Sheep,	1,967		
(e) Goats,	3		
Total number of carcasses passed,			25,089
Total number of carcasses condemned,			397
(a) Cattle,	147		
(b) Calves,	193		
(c) Hogs,	57		
Reasons for condemnation: —			
(a) Tuberculosis,		164	
Cattle,	139		
Calf,	1		
Hogs,	24		
(b) Immature,		173	
Calves,	173		
(c) Hog cholera,		26	
Hogs,	26		
(d) Pneumonia,		1	
Cow,	1		
(e) Dropsy,		1	
Cow,	1		

Reasons for condemnation — *Concluded.*			
(f) Abscesses,		1	
Cow,	1		
(g) Pericarditis,		1	
Cow,	1		
(h) Parturient fever,		1	
Calf,	1		
(i) Hepatitis,		3	
Hogs,	3		
(j) Emaciated,		2	
Hogs,	2		
(k) Blood poison,		1	
Hog,	1		
(l) Bruised,		18	
Cattle,	2		
Calves,	15		
Hog,	1		
(m) Injured,		1	
Calf,	1		
(n) Inspector not present,		4	
Cattle,	2		
Calves,	2		
Total number of reasons for condemnation,			397

Summary — *Concluded.*

Disposition of carcasses: —

(*a*) Rendered,		292	
Cattle,	118		
Calves,	147		
Hogs,	27		
(*b*) Buried,		87	
Cattle,	29		
Calves,	28		
Hogs,	30		
(*c*) Fed to hogs,		10	
Calves,	10		
(*d*) Fed to hens,		8	
Calves,	8		
Total number of dispositions of carcasses,			397

The following cities and towns reporting upon the work of inspection rendered "Nothing to report:"—

Boxborough,	Hanson,	Plympton,
Burlington,	Hingham,	Quincy,
Canton,	Holbrook,	Somerville,
Chilmark,	Malden,	Stow,
Dalton,	Melrose,	Swampscott,
Erving,	Middleton,	Tisbury,
Everett,	Newton,	Whitman.
Halifax,	Norfolk,	

During April, May and June, 1913, it was found necessary to condemn and destroy the following meats at slaughterhouses on account of disease and illegal slaughtering.

The following table shows the kind of carcasses confiscated, the number of pounds in each confiscation, the reasons, and the disposition of the same: —

Date.	Articles.	Reasons.	Disposition.
Apr. 3, 1913,	50 pounds veal, .	Uninspected and unstamped, .	Rendered.
Apr. 3, 1913,	365 pounds beef, .	Uninspected and unstamped, .	Rendered.
Apr. 30, 1913,	90 pounds veal, .	Uninspected and unstamped, .	Destroyed with lime.
May 27, 1913,	38 pounds veal, .	Immature, ...	Rendered.
June 10, 1913,	34 pounds veal, .	Immature, ...	Fed to dogs.
June 10, 1913,	822 pounds beef, .	Tuberculosis, ...	Rendered.
June 24, 1913,	25 pounds veal, .	Immature, ...	Rendered.
June 25, 1913,	31 pounds veal, .	Immature, ...	Rendered.
June 30, 1913,	500 pounds beef, .	Tuberculosis, ...	Rendered.
Total, .	1,955 pounds.		

The following convictions were secured because the inspector was not present at the time of slaughter, and the meat was unstamped: —

Name.	Place.	Fines imposed.
Max Steinberg, ...	Methuen, ...	$40 00
Max Cohan, ...	Methuen, ...	25 00
Total fines, ...	. . . . . .	$65 00

The licenses of Messrs. Steinberg and Cohan were revoked in accordance with paragraph 15 of the slaughtering laws of Massachusetts.

REPORT ON INSPECTION OF DAIRIES.

During the month of August, 1913, 404 dairies supplying milk for public sale in Massachusetts were examined, 1 of which is situated in Vermont. The Massachusetts dairies yielded the following data: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Athol,	7	3	42.86	4	57.14
Second inspection,	3	1	33.33	2	66.67
Third inspection,	5	4	80.00	1	20.00
Berlin,	12	7	58.33	5	41.67
Second inspection,	4	4	100.00	–	–
Third inspection,	15	10	66.67	5	33.33
Fourth inspection,	2	1	50.00	1	50.00
Clarksburg,	5	3	60.00	2	40.00
Second inspection,	6	3	50.00	3	50.00
Third inspection,	4	2	50.00	2	50.00
Clinton,	2	1	50.00	1	50.00
Third inspection,	1	1	100.00	–	–
Colrain,	13	2	15.38	11	84.62
Second inspection,	19	9	47.37	10	52.63
Duxbury,	–	–	–	–	–
Fourth inspection,	1	1	100.00	–	–
Erving,	3	–	–	3	100.00
Fitchburg,	4	3	75.00	1	25.00
Second inspection,	10	8	80.00	2	20.00
Third inspection,	21	19	90.48	2	9.52
Fourth inspection,	2	1	50.00	1	50.00
Gardner,	4	1	25.00	3	75.00
Second inspection,	4	2	50.00	2	50.00
Third inspection,	16	10	62.50	6	37.50
Heath,	3	–	–	3	100.00
Second inspection,	4	2	50.00	2	50.00
Lancaster,	10	9	90.00	1	10.00
Third inspection,	10	8	80.00	2	20.00
Lunenburg,	–	–	–	–	–
Second inspection,	3	2	66.67	1	33.33
Third inspection,	32	26	81.25	6	18.75
Marlborough,	9	5	55.56	4	44.44
Second inspection,	14	8	57.14	6	42.86
Third inspection,	22	11	50.00	11	50.00
Fourth inspection,	5	5	100.00	–	–
Northborough,	3	2	66.67	1	33.33
Second inspection,	2	–	–	2	100.00
Third inspection,	25	20	80.00	5	20.00
Fourth inspection,	1	–	–	1	100.00
Orange,	17	9	52.94	8	47.06
Second inspection,	8	4	50.00	4	50.00
Phillipston,	–	–	–	–	–
Second inspection,	2	1	50.00	1	50.00
Plymouth,	–	–	–	–	–
Third inspection,	1	1	100.00	–	–
Rowe,	1	–	–	1	100.00

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Royalston,	–	–	–	–	–
Second inspection,	1	–	–	1	100.00
Third inspection,	2	2	100.00	–	–
Shirley,	1	1	100.00	–	–
Second inspection,	5	5	100.00	–	–
Third inspection,	8	8	100.00	–	–
Templeton,	5	2	40.00	3	60.00
Second inspection,	1	–	–	1	100.00
Third inspection,	12	6	50.00	6	50.00
Westminster,	5	4	80.00	1	20.00
Second inspection,	14	10	71.43	4	28.57
Third inspection,	4	3	75.00	1	25.00
Williamstown,	2	1	50.00	1	50.00
Second inspection,	5	3	60.00	2	40.00
Third inspection,	3	2	66.67	1	33.33

Total number of dairies examined (including that in Vermont),	404
Number found to be free from objectionable conditions,	257
Number concerning which letters were sent,	147
Total number of conditions to which attention was called,	417
Percentage of dairies which passed inspection,	63.61

In addition to the above, 164 dairies were visited at which the sale of milk had been discontinued; also, 61 dairies were reported as producing less than twenty quarts of milk a day.

Included in the total number of dairies visited were 106 which had recently started in the milk-producing business and were inspected for the first time.

The names of the owners of the dairies found to be worthy of commendation follow: —

Athol.

Class B.

Beaman, M. A. & Son ‡ ||
Burnam, C. H.
Haven, E. J.‡ †
Hood, F. L.* †
Newhall & Chase
Pike, O. R.
Sedgeley, A. Roy ‡ †
Stone, R. S.‡

Berlin.

Class A.

Poland, C. C.
Wheeler, Edward ‡

* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
|| Reported favorably on all previous inspections.

Class B.

Ayers, W. H.‡ ||
Buxton, F. P.*
Carter, L. D.‡ †
Churchill, R. B.‡
Cole, Walter ‡
Collins, (Mrs.) Mary *
Gilmore, Isaac D.*
Harper, H. H.‡ ||
Harriman, M. B.
Hubbard, Charles J. G.‡
Paradis, L. W.‡ †
Porter & Dewson
Robbins, M. A.
Sawyer, H. J.* †
Schirmer, C. G.
Severance, Nathan § †
Sladen, C. E.
Turnbull, F. H.
Tyler, James D.‡ ||
Wight, D. H.‡ ||

Clarksburg.

Class B.

Alderman, Dallus A.‡ ||
Beers, C. N.
Blanchard, D. W.* †
Eddy, W. H.* †
Loveridge, Edwin J.*
Oaks, Lewis A.‡ ||
Trudeau Brothers
VanAlstyne & McCuen

Clinton.

Class B.

Rauscher, John ‡
Savage, Frank G.

Colrain.

Class B.

Avery, Clark * †
Avery, Frank * †
Barnes, Walter * †
Coombs, Calvin S.*
Copeland, E. F. & Son * †
Howard, J. H.* †
Lively & Galipeault
Luescher, Rudolf *
Miller & Wells
Temple, S. E.* †
Thompson, Mylo & Son * †

Duxbury.

Class AA.

Bay Farm Company § ||

Fitchburg.

Class B.

Bingham, (Dr.) Russell * †
Brown, J. D.‡
Caonette, C.‡
Caswell, A. B.‡
Cutting, George A.‡
Davis, S. W.‡
Fairbanks, C. L.‡ ||
Grey, George ‡
Grubb, J. G.‡ ||
Grubb, Robert * †
Harris, A. S.‡
Hartwell, Nelson W.§
Hertel, Robert ‡
Hirsch, A. F.‡
Hirvi, Jacob ‡ ||
Kalustian Brothers *
Levalley, A. G.‡ †
Liloiva, Albert *
Lohti, John *
Loiselle, John ‡
McIntyre, (Miss) E. L.
Moilanen, Lars ‡ ||
Nadeau, David *
Nordman, John * †
Plimpton, M. F.*
Proctor, G. N.
Putnam, J. E.‡ ||
Rossback, C.
Scripture, A. W.‡
Scripture, Edgar M.‡
Soini, Frank ‡

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

Gardner.

Class A.

Brown, C. E.‡ ||
Haywood, (Mrs.) Helen R.‡ ||
Knight, W. E.‡

Class B.

Ehnstrom, O. E.‡
Grimes, C. A.
Hale, B. A.‡
Nissula, John * †
Rice, H. W. & (Mrs.) Cora * †
"Town Farm" ‡
Underwood, (Dr.) G. P.‡ †
Wickman, Otto ‡ ||
Wilder Farm ‡
Wilson, F. W.‡ ||

Heath.

Class B.

Lively, Armedos * †
Lively, Levi * †

Lancaster.

Class A.

Summ, J. C.

Class B.

Adams, George I.
Avery, E. C.
Blood, W. H.‡
Bradley, (Mrs.) Ann ‡
Esterbrook, H. C.
Gilmore, John ‡
Hannaford, F. A.
Hawkins, Everett M.
Hutt, Manson
McWilliams, Richard
Parker, Harold
Sawyer, Foster ‡
Schumacher, C. A.‡
Thurlow, Edward E.‡
"Town Farm" ‡ ||
Warren, Charles ‡

Lunenburg.

Class A.

Fish, W. J.‡
Proctor, William R., Jr.‡

Class B.

Allen, Charles L.‡ ||
Berg, Axel ‡
Billings, G. A.‡
Brown, James ‡
Burnap, Walter R.‡
Carr, F. B.‡
Charlton, Joseph W.‡
Descoteox, Joseph ‡
Fiske, Albert L.*
Goodnow, L. W.‡
Harrington, James L.‡
Hoisington, A. L.‡
Ide, (Mrs.) W. L.‡ †
Martin, E. D.‡
Mead, H. O.‡ †
Peabody, W. S.‡ ||
Price, E. H.‡
Proctor, Ernest K.‡
Proctor, Warren ‡
Sherwood, A. H.‡
Snow, James B.‡
"Town Farm" ‡ ||
Whitcomb, George H.‡
Williams, George F.‡
Woodward, Jerry ‡
Young, Edwin * †

Marlborough.

Class A.

Howe, Elmer D. & Son ‡ ||

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
|| Reported favorably on all previous inspections.

Class B.

Ames, E. P.‡
Barnes, George H.§
Berry, C. P.
Bouvier, D.
Bowler, (Dr.) J. W.* †
Brigham, E. A.* †
Clarke, R. A.*
Curtis, Charles W.‡ ||
Downey Brothers *
Fay, E. L.§
Felton, E. A.‡
Forbush, Gilbert M.*
Hammond, D. H.‡
Hanson, Christian ‡
Hapgood, L.*
Jones, (Est. of) C. H. ‡
Knapp, S. A.* †
Martin, George L.* †
Mauro, E. G.
Nourse, H. H.§
Reilly, William R.
Rowles, C. H.‡
Shaughnessy, Jeremiah H.‡ ||
Sherman, E. P.§
Stadelman, A.‡
Trimble, Robert
Walker, Joseph §
Wilbur, Walter M.‡

Northborough.

Class B.

Adams, Rufus ‡
Bigelow, C. A.
Blakely, Henry W.‡
Brigham, George A.‡
Brigham, W. O.‡
Buckley, S. & Son ‡
Bucklin, George H.‡
Corey, Edwin S.‡
Dauckert, Daniel F.‡
Flibert, Thomas ‡
Franklin, C. F.‡
Kimball, H. L.‡
Lawrence, Charles A.‡
Potter, Clarence A.‡
Ross, Joseph G.‡
Russell, Walker ‡
Smith, Chester A.‡
Tilley, E. G.
Valentine, E. C.‡ ||
Warren, George A.‡
Wilson, (Mrs.) Lucy J.‡ ||
Woodward, T. C.‡ ||

Orange.

Class A.

Engvall, Claus *
Pratt, W. E.* †
Walker, J. B.

Class B.

Anderson, Oscar E.
Cummings, Benjamin * †
Gregory, G. D.
Lewis, C. A.
Moore, John N.*
Newton, Charles
Nichols, A. B.
White, A. C. & R. O.
Williams, F. P.
Worick, L. F.

Phillipston.

Class B.

Rounds, George E.* †

Plymouth.

Class A.

Whipple, Sherman ‡ ||

Royalston.

Class A.

Cross, Fred W.‡

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

Class B.

Harrington, Allen ‡

SHIRLEY.

Class B.

Andrews, C. H.‡
Bartlett, D.‡
Boutilier, W. A.*
Cummings, A. R.‡
Dunn, A. G.* †
Evans, J. W.
Farnsworth, M. V.‡
Graves, N. R.‡
Harris, C. A.‡ †
Hazen, (Mrs.) Kate * †
Holden, George ‡
Holden, H.‡
Karvonen, John * †
Longley, H. M.‡

TEMPLETON.

Class B.

Brown, Louis M.‡ ||
Browning, H. L.
Grey, William ‡ ||
Harwood, Augustus ‡ ||
Nygard, John ‡
Stiles, G. E.‡ ||
Winch, H. O.
Woodward, Clarence ‡

WESTMINSTER.

Class A.

Wiswell, George F.*

Class B.

Beauregard, J.*
Cedar, M.
Hartnett, W. E.* †
Kahkold, P.‡
Koskinen, V.‡
Laws, W. H.*
Marchard, Joseph * †
Merriam, E. H.* †
Merritt, M. D.‡ ||
Page, Porter * †
Ray, F. J.
Story, J. E.
Vieweg, Ernest * †
Ware, H. O.
Waterhouse, W. H.*
Wuth, Emil *

WILLIAMSTOWN.

Class A.

Prindle, George H.‡ ||

Class B.

Galusha, Daniel *
Hickox, Lincoln S.* †
Lowry, George E.
Prindle, John F.* †
Thompson, Daniel P.‡ ||

VERMONT.

PLACE.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Halifax,	–	–	–	–	–
Second inspection,	1	1	100.00	–	–

* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
|| Reported favorably on all previous inspections.

THE CORRELATION OF THE WORK OF SCHOOL PHYSICIANS AND LOCAL AND STATE HEALTH OFFICIALS.[1]

By Wm. C. Hanson, M.D., for the Massachusetts State Board of Health.

The beginning of the medical examination of school children in this country was made in the State of Massachusetts in the fall of 1894. To Dr. Samuel H. Durgin of Boston, then chairman of the city board of health, more than to any other one person, belongs the credit for starting the work and for establishing legislative authority to make it useful and efficient. Dr. Durgin's purpose of examining school children was twofold: (1) to look after the physical welfare, as well as the mental development of the child; and (2) to prevent, so far as possible, the spread of dangerous diseases.

In recent years the educational authorities have come to realize the close interrelation between the physical and mental development of the child, to the extent that they now consider it to be their duty to look after both.

It has thus come about that both health and school authorities claim it to be within their province to provide such inspection of the school children as to protect them from harm by reason of their attending school; not only from disease which may originate outside the school or among the school children, but from conditions of ill health detected in the schoolroom.

Let us see how the inspection work is conducted to-day in a Massachusetts town with a population of about 10,000 inhabitants, including a school population of about 2,000. In this town two physicians are employed by the school committee, at a salary of $150 per year. In order to supplement the work of the physicians a school nurse is employed at a salary of $800. Although both physicians and nurse are responsible to the school committee, they conduct their work in such manner as they deem it proper, neither being guided by instructions issued by the committee. There is, then, no supervision of the work on the part of the school committee. Moreover, neither the physicians nor the nurses are familiar with the work of the local health officials.

The school physician's business is to exclude from the school pupils found to be physically or mentally unfit for work, and those known to

[1] Read at Fourth International Congress on School Hygiene, Buffalo, N. Y., Aug. 27, 1913.

have any communicable disease; the local health official's business is to discover the source of infection of any and all cases of communicable disease in the community, within or without the school, and to do all within his power to prevent the spread of infection.

The school physician, so far as he is influenced at all, follows the idea of the school superintendent of carrying out the original course of work that was planned at the beginning of the school year, and does everything that he can to prevent the school's being closed. The local health officer, on the other hand, when there is a case of scarlet fever or diphtheria, acting either with or without the advice of the school physician, closes the school through the power of the board of health to establish quarantine, and often unwisely and unnecessarily causes an interruption of the school curriculum.

Suppose, instead of the school physicians and nurses being in the employ of the school committees and having no official dealings with the board of health, the school and health inspection work is entirely in the hands of the local board of health, — what then happens?

In a Massachusetts city with a population of about 104,000, including a school population of about 18,000, there are six school physicians in the employ of the board of health. Two nurses are also employed by the Board to follow into the homes many of the children with defects or diseases discovered by the physicians. Each physician and nurse does practically as he or she pleases, visits the schoolhouses and the homes of the pupils, and submits his or her report at irregular intervals to the board of health. The Board has issued no printed or written instructions for the guidance of either physicians or nurses. One physician, for example, may and does take a great deal of interest in his work, the interest carrying him along in it, even for the small salary of $200 per year, so that he does for the city far more than he is paid for doing; whereas another physician does his work in an irregular fashion, taking little interest in it, partly because of the small salary, and submitting his reports only when requested, if at all.

But there is one saving thing about the work as conducted in this city, for each school physician must report at once to the board of health every case of communicable disease in the school and in the community wherein the school is located, for he acts not only as school physician but as agent to the board of health. He has, however, no idea of correlating the school and health work any more than has the Board which employs him.

From what has been said, therefore, it will be inferred that whether the school inspection work is conducted by persons in the employ of the local school committee or the board of health, it is not supervised in the great majority of the cities and towns in the Commonwealth. This is a fact.

What is the reason for this lack of definite supervision of the work of

school physicians? The answer, it would seem, is the same as applies to all health work: lack of sufficient interest and appreciation on the part of the public as to the benefits that come from work of this sort if well done, and, consequently, lack of money to standardize and put the work on a practical basis.

The lowest salary paid by the school committee to-day in any Massachusetts community for school physician's work is $25 per year; the highest, $800 per year. School physicians in the employ of boards of health, of course, receive higher salaries, since their duties comprise many of the duties of a local health official; but even then $500 is usually the limit, unless the general health duties predominate, in which case a physician may receive a salary of $900, $1,200, $1,500, or, rarely, more.

Admitting the facts as presented by persons in the work, what steps can and should be taken at once to strengthen the inco-ordinated attempts made to examine the children in the public schools, in the interest of the health of the entire community?

We know that too little money is provided for both school and community health work, and we have reason to believe that the public does not yet understand, and, consequently, does not appreciate, the importance of preventive health work. A more generous appropriation should be furnished, particularly by the local communities through the efforts of able and influential citizens, who should be told explicitly, in a business-like manner, why more money is needed and how it is to be used.

In spite of the present limited appropriation, school and health officials are already obtaining much assistance from the public, some of which has been direct on the part of certain individuals, as, for example, physicians and others who are giving their time and efforts practically without financial compensation, and some indirect, through the representatives of the people in the Legislature, by means of legislation.

The question naturally arises as to whether the best use is made of the assistance already given? Model work in any community deserves wide recognition and may be used as a standard to which work of an imperfect sort should be brought. Has this been done?

Is there, for instance, at present any individual or board that could urge upon certain communities in the State the highest standard and method of school inspection work developed by other communities? To be able to accomplish a thing of this sort requires familiarity with local conditions throughout the Commonwealth. This, in turn, requires men of experience in preventive medicine who have been thrown in contact with business and social interests in the local communities, — men of good judgment and with broad interests, whose chief aim in life is to conserve the public health by preventing, so far as possible, the spread of disease, and by point-

ing out all sorts of conditions and circumstances that are known to be prejudicial to health.

It is true that existing legislation may not be so complete as one might desire, but has all been done that could, to advantage, be done under such legislation as we have?

If we analyze the situation carefully, and face squarely the facts of the case, I believe we are obliged to answer in the negative.

Fundamentally it makes little difference whether school or health officials control the medical inspection of school children. The first essential is a thorough and well-supervised system of school health work on the part of whichever board the local community in question sees fit to appoint. The second essential is a practical correlation of the school and community health work.

How can local school inspection work be standardized, and, to a considerable extent, be correlated with the health work in the community and that of the state as a whole? Considering the present attitude of city and town governments and the tax-payers on the question of expense, is it not imperative that we demand at once more specific and stringent legislation, and thus obtain full State control of the situation?

I think not. Massachusetts has always held, and from present indications can afford to hold, strongly to the principle of local self-government. By local government, however, is not meant that a community can govern itself entirely in an isolated manner, without regard to the welfare of other communities. It cannot. Happily for Massachusetts it can be said that but few of even the most inaccessible communities show any such attitude or tendency in the management of their affairs.

What is pre-eminently needed in Massachusetts to-day is the bringing together of the local communities in such a way as to make it impossible for any single community not to know what constitutes, in a place of its size and characteristics, the best practical sort of school health inspection work. This is not impossible, but, on the contrary, is a feasible thing to undertake. Moreover, in this accomplishment local communities will gradually find that such work can be brought about in a manner that is bound to be recognized by the State as a highly creditable work.

In this way, better than in any other, local interest and initiative is kept up, which is, after all, the great thing to be desired.

Now Massachusetts is particularly fortunate in having associated with the State Board of Health physicians whose chief business is to assist the local health authorities, and to instruct and inform them, if necessary, on matters relating to the prevention of disease. They are, from the nature of their position, their training and experience, competent to do just that sort of thing, which results in bringing together the health authorities of

neighboring communities. That was why the Commonwealth wanted their services. Having no autocratic powers over the local authorities, and standing as they do between the municipalities of Massachusetts and the health authorities at the State House, they accomplish to-day much in the way of preventing disease that cannot be definitely stated by the words of any written statute.

Into the hands of these men, therefore, whose duties already take them to the cities and towns, could be put the supervision of the medical school inspection of the State. Just as now they advise with the health officers and Boards, investigate conditions and make recommendations, so they could advise with the school physicians, observe their methods and results, and, by bringing to them definite experiences of similar communities with similar problems, incite that instinctive desire for high standards which comes so much more surely and vigorously by education than by legislation.

State advisory supervision of school and community health work for the Commonwealth of Massachusetts is in the interest of economy, and is both logical and practical. It will insure local supervision of the medical inspection of schools, regardless of whether that work is controlled by the school committee or the board of health. It will gradually lead to a high and uniform standard of examination of the pupils throughout the Commonwealth; it will preserve local interest and initiative in all health work; it will permit local officials of the school and health boards to have such information in common as each needs, without duplication of work, and it will bring the State educational and health authorities together on a problem that demands combined action in the interest of the public welfare.

POWERS OF LOCAL VERSUS THE STATE BOARD OF HEALTH IN THE PREVENTION OF THE SPREAD OF INFECTIOUS DISEASES.

While investigating an outbreak of typhoid fever in a town with a population of about 2,000, the State Inspector of Health discovered a patient ill with the disease who was employed as cook in a hotel. He succeeded in causing the patient to be removed to a hospital without delay. During the interview with the proprietor of the hotel he made the request that in view of the fact that the patient had been handling all the food served to the guests of the hotel, he be given a list of the names of all the guests that were registered in the hotel for the period of two weeks previous to the day when the patient was removed to the hospital. The request was made in order that the State Board of Health, through the State Inspector of Health,

might notify the people who had stopped or stayed at the hotel of the fact that they had been exposed to typhoid fever and suggest to them anti-typhoid vaccination.

When the State Inspector of Health requested the proprietor of the hotel for a complete list of guests who had been at the hotel during the period stated, he refused to furnish such list on the ground that if he did so it would ruin his business, since it would undoubtedly alarm the people so that they would not come to him in subsequent years. It did not seem to the State Inspector of Health, however, that this was sufficient reason for not taking the action suggested, and he at once reported the matter to the State Board of Health who informed the Attorney-General that such a notification was due to the guests of the hotel in order that they might take prompt measures to prevent, if possible, becoming infected with the disease, and requested of the Attorney-General an opinion whether under the circumstances the State Board of Health had a right to the hotel register for the purpose mentioned, in the interest of protecting the public health.

The Attorney-General while informing the State Board of Health that they might properly request the proprietor of the hotel for a complete list of guests who had been at the hotel during a given period, stated that he knew of no law which would authorize the State Board of Health to seize the hotel register for purposes of examination, but that if the *local* board of health or its agent should request such a list of guests from the hotel proprietor, and he should refuse to comply with the request, he would, in his opinion, be guilty of obstructing the board of health, within the meaning of section 43 of chapter 75 of the Revised Laws, and would be subject to the penalty therein provided.

Following is the Attorney-General's reply in full: —

THE COMMONWEALTH OF MASSACHUSETTS,
DEPARTMENT OF THE ATTORNEY-GENERAL, BOSTON, Aug. 18, 1913.

WILLIAM C. HANSON, M.D., *Acting Secretary, State Board of Health.*

DEAR SIR: — In behalf of the State Board of Health you have requested my opinion upon a question which has arisen from the following facts: —

A cook employed in a summer hotel within the Commonwealth has been found to be infected with typhoid fever, a disease dangerous to the public health. For the purpose of preventing the spread of the infection an inspector of the State Board of Health has deemed it wise to give notice to all persons who have been guests at the hotel from the beginning of July until the time when the patient was removed to the hospital, of the fact that they may have been exposed to typhoid fever, and to suggest antityphoid vaccination. The proprietor of the hotel has been requested to furnish a list of such guests to the State Inspector of Health, but has refused to comply with the request, on the ground that such action might cause injury to his business.

The question upon which my opinion is requested is whether "the State Board

of Health have a right to the hotel register for the purpose mentioned, in the interests of protecting the public health."

R. L., c. 75, s. 43, provides as follows: —

If such disease (a disease dangerous to the public health) exists in a town, the selectmen and board of health shall use all possible care to prevent the spread of the infection, and shall give public notice of infected places to travellers by displaying red flags at proper distances and by all other means which in their judgment may be most effectual for the common safety. Whoever obstructs the selectmen, board of health or its agent in using such means, or wilfully removes, obliterates, defaces or handles such red flags or other signals shall forfeit not less than ten nor more than one hundred dollars for each offence.

Under the provisions of this section it is the duty of the local board of health to use all possible care to prevent the spread of the infection, and that board is vested with power to use any means which in their judgment may be most effectual for the common safety. If the board, therefore, considers notification of the guests of the hotel who have been exposed to the disease one of the most effectual means of preventing the spread of infection, it is their duty to employ that means.

Under the provisions of section 8 of said chapter 75 the State Board of Health is charged with the duty of investigating contagious or infectious diseases dangerous to the public health, and the means of preventing the spread of the same, and it is vested with powers co-ordinate with those of the local board of health of a city or town.

The State Board of Health is, therefore, authorized by law to employ the method suggested for preventing the spread of the disease, and may properly request the proprietor of the hotel for a complete list of guests who have been at the hotel during the period stated.

While I know of no law which would authorize the State Board of Health to seize the hotel register for purposes of examination, nevertheless, if the local board of health or its agent should request such a list of guests from the hotel proprietor, and he should refuse to comply with the request, he would, in my opinion, be guilty of obstructing the board of health, within the meaning of section 43, and would be subject to the penalty therein provided.

Very truly yours,

James M. Swift,
Attorney-General.

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The State Board of Publication.

RETURNS OF DISEASES.

Cases of Diseases declared by the State Board of Health to be Dangerous to the Public Health.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

DISEASE.	Week ending —				
	Sept. 6.	Sept. 13.	Sept. 20.	Sept. 27.	Total.
Diphtheria,	84	99	124	102	409
Measles,	40	20	22	46	128
Scarlet fever,	59	36	70	72	237
Typhoid fever,	99	83	112	137	431
Tuberculosis, pulmonary (or not classified),	112	127	133	109	481
Tuberculous meningitis,	–	2	4	2	8
Tuberculosis, other forms,	4	6	7	5	22
Cerebro-spinal meningitis,	4	1	2	6	13
Whooping cough,	59	81	34	42	216
Varicella,	8	8	16	22	54
Ophthalmia neonatorum,	35	37	64	45	181
Anterior poliomyelitis,	29	31	31	29	120
Smallpox,	3	–	1	1	5
Trachoma,	–	4	3	3	10
Trichinosis,	1	–	–	–	1
Glanders,	1	–	–	–	1

Cases of Infectious Diseases not included in the Above Table.

[Cases not notifiable under the provisions of section 52 of chapter 75 of the Revised Laws.]

DISEASE.	Week ending —				
	Sept. 6.	Sept. 13.	Sept. 20.	Sept. 27.	Total.
Mumps,	1	1	1	1	4
Tonsilitis,	–	–	1	–	1

RETURNS OF DEATHS.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Cities and Towns of More than 10,000 Population.

[Under the provisions of chapter 210, Acts of 1913.]

Week ending Sept. 6, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	21[3] 23[4]	11[1] 13[2]	– –	2[1] 2[2]	4[1] 4[2]	1[1] 1[2]	– –	– –	2[1] 2[2]	– –
Worcester,	145,986	9	–	3	–	1	3	–	1	1	–
Fall River,	119,295	3	1	1	–	–	1	–	–	–	–
Lowell,	106,294	1	1	–	–	–	–	–	–	–	–
Cambridge,	104,839	2	2	–	–	–	–	–	–	–	–
New Bedford,	96,652	4	3	–	1	–	–	–	–	–	–
Lynn,	89,336	4	2	–	1	–	1	–	–	–	–
Springfield,	88,926	3	–	–	–	–	3	–	–	–	–
Lawrence,	85,892	2	–	–	–	–	1	–	–	1	–
Somerville,	77,236	–	–	–	–	–	–	–	–	–	–
Holyoke,	57,730	1	1	–	–	–	–	–	–	–	–
Brockton,	56,878	4	2	1	–	1	–	–	–	–	–
Malden,	44,404	–	–	–	–	–	–	–	–	–	–
Haverhill,	44,115	1[5]	–	–	–	–	–	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	–	–	–	–	–	–	–	–	–	–
Taunton,	34,259	1	1	–	–	–	–	–	–	–	–
Everett,	33,484	1	1	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	2	1	–	–	1	–	–	–	–	–
Pittsfield,	32,121	–	–	–	–	–	–	–	–	–	–
Waltham,	27,834	2	–	1	–	1	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	–	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	1	–	–	–	–	–	–	–	–	1
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	1	1	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	2	2	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	1	1	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	1	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	1	–	–	–	–	1	–	–	–	–
Total of reporting towns,	1,909,521	70	33	6	4	8	11	–	1	4	1

[1] Nonresidents deducted.
[2] Total deaths.
[3] Nonresidents deducted: one death from tetanus.
[4] Total deaths: one death from tetanus.
[5] One death from anterior poliomyelitis.

Week ending Sept. 13, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	29[3] 31[4]	19[1] 20[2]	1[1] 2[2]	1[1] 1[2]	1[1] 1[2]	3[1] 3[2]	1[1] 1[2]	– –	1[1] 1[2]	1[1] 1[2]
Worcester,	145,986	1	1	–	–	–	–	–	–	–	–
Fall River,	119,295	7	4	–	–	2	1	–	–	–	–
Lowell,	106,294	3	1	–	–	2	–	–	–	–	–
Cambridge,	104,839	3[5]	2	–	–	–	–	–	–	–	–
New Bedford,	96,652	5[5]	3	–	–	–	1	–	–	–	–
Lynn,	89,336	4	4	–	–	–	–	–	–	–	–
Springfield,	88,926	3	2	–	–	–	1	–	–	–	–
Lawrence,	85,892	2	2	–	–	–	–	–	–	–	–
Somerville,	77,236	3	1	1	1	–	–	–	–	–	–
Holyoke,	57,730	4	4	–	–	–	–	–	–	–	–
Brockton,	56,878	1	1	–	–	–	–	–	–	–	–
Malden,	44,404	1	–	1	–	–	–	–	–	–	–
Haverhill,	44,115	5	4	–	–	–	1	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	–	–	–	–	–	–	–	–	–	–
Taunton,	34,259	–	–	–	–	–	–	–	–	–	–
Everett,	33,484	3	1	1	–	–	–	–	–	1	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	2	1	–	–	1	–	–	–	–	–
Pittsfield,	32,121	–	–	–	–	–	–	–	–	–	–
Waltham,	27,834	1	1	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	–	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	1	1	–	–	–	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	1	1	–	–	–	–	–	–	–	–
Westfield,	16,044	3	3	–	–	–	–	–	–	–	–
Peabody,	15,721	1	–	1	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	1	–	–	–	–	–	–	–	1	–
Framingham,	12,948	1[5]	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	1	1	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	2,005,997	88	58	6	2	6	7	1	–	3	1

[1] Nonresidents deducted.
[2] Total deaths.
[3] Nonresidents deducted: one death from glanders.
[4] Total deaths: one death from glanders.
[5] One death from anterior poliomyelitis.

Week ending Sept. 20, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	22[1] 25[2]	16[1] 17[2]	1[1] 1[2]	– 2[2]	2[1] 2[2]	– –	– –	– –	3[1] 3[2]	– –
Worcester,	145,986	–	–	–	–	–	–	–	–	–	–
Fall River,	119,295	2	1	1	–	–	–	–	–	–	–
Lowell,	106,294	5	3	–	–	1	1	–	–	–	–
Cambridge,	104,839	7	6	–	–	–	–	–	–	1	–
New Bedford,	96,652	2	1	–	–	–	–	–	–	–	1
Lynn,	89,336	1	1	–	–	–	–	–	–	–	–
Springfield,	88,926	5	3	–	–	–	1	–	1	–	–
Lawrence,	85,892	7	5	–	–	–	1	–	1	–	–
Somerville,	77,236	–	–	–	–	–	–	–	–	–	–
Holyoke,	57,730	1	–	–	–	1	–	–	–	–	–
Brockton,	56,878	2	–	1	1	–	–	–	–	–	–
Malden,	44,404	1	–	–	–	–	–	–	–	–	1
Haverhill,	44,115	3	2	–	–	–	–	–	–	–	1
Salem,	43,697	1	1	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	–	–	–	–	–	–	–	–	–	–
Taunton,	34,259	1	1	–	–	–	–	–	–	–	–
Everett,	33,484	–	–	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	3	2	–	–	–	–	–	–	1	–
Pittsfield,	32,121	2	1	–	–	1	–	–	–	–	–
Waltham,	27,834	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	1	1	–	–	–	–	–	–	–	–
Chicopee,	25,401	2	1	–	1	–	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	2	1	–	1	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	2	1	–	–	–	–	–	1	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1[3]	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	1	1	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,837,340	77	49	3	5	5	3	–	3	5	3

[1] Nonresidents deducted. [2] Total deaths. [3] One death from anterior poliomyelitis.

Week ending Sept. 27, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	19[1]	11[1]	–	–	3[1]	3[1]	–	–	2[1]	–
		25[2]	13[2]	–	–	5[2]	4[2]	–	–	3[2]	–
Worcester,	145,986	–	–	–	–	–	–	–	–	–	–
Fall River,	119,295	3	1	–	–	2	–	–	–	–	–
Lowell,	106,294	4	1	–	–	1	2	–	–	–	–
Cambridge,	104,839	9	7	1	–	1	–	–	–	–	–
New Bedford,	96,652	4[3]	3	–	–	–	–	–	–	–	–
Lynn,	89,336	2	2	–	–	–	–	–	–	–	–
Springfield,	88,926	1	1	–	–	–	–	–	–	–	–
Lawrence,	85,892	2[4]	–	–	–	–	–	–	–	–	–
Somerville,	77,236	3	–	1	–	–	–	1	–	1	–
Holyoke,	57,730	3	2	–	–	–	1	–	–	–	–
Brockton,	56,878	4[3]	1	–	–	2	–	–	–	–	–
Malden,	44,404	–	–	–	–	–	–	–	–	–	–
Haverhill,	44,115	1	–	1	–	–	–	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	2	1	–	–	–	1	–	–	–	–
Fitchburg,	37,826	1	1	–	–	–	–	–	–	–	–
Taunton,	34,259	3	1	–	1	–	1	–	–	–	–
Everett,	33,484	–	–	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	1	1	–	–	–	–	–	–	–	–
Pittsfield,	32,121	3	1	–	1	–	1	–	–	–	–
Waltham,	27,834	1	–	–	–	–	1	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	4	2	–	–	–	1	–	–	–	1
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	2	–	–	1	1	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	1	1	–	–	–	–	–	–	–	–
Peabody,	15,721	1	–	–	–	–	–	1	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	1	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	1	1	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	1	–	–	–	–	–	–	–	1	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,933,379	83	41	3	3	12	12	2	–	5	1

[1] Nonresidents deducted.

[2] Total deaths.

[3] One death from anterior poliomyelitis.

[4] Two deaths from anterior poliomyelitis.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Towns of Less than 10,000 Population.

[Under the provisions of chapter 210, Acts of 1913.]

DISEASE.	Place.	Week ending — Sept. 6.	Sept. 13.	Sept. 20.	Sept. 27.
Tuberculosis, pulmonary (or not classified).	Amesbury,	–	–	–	1
	Blackstone,	1	–	–	–
	Great Barrington,	1	–	–	–
	Longmeadow,	–	–	1	–
	Middleton,	–	1	–	–
	North Andover,	–	1	2	–
	Spencer,	–	1	–	–
	Winchendon,	–	–	–	1
	Winchester,	–	1	–	–
Total,		2	4	3	2
Tuberculous meningitis,	Northampton,	1	–	–	–
Tuberculosis, other forms.	Bernardston,	–	–	–	1
	Bridgewater,	–	–	–	1
	Wareham,	–	–	1	–
Total,		–	–	1	2
Typhoid fever,	Longmeadow,	–	–	1	–
	Mansfield,	–	1	–	–
	N. Attleborough,	–	–	1	–
	Saugus,	–	1	–	–
	Swampscott,	–	–	1	–
	Westminster,	–	–	1	–
	Winchendon,	–	–	–	1
Total,		–	2	4	1
Diphtheria,	Seekonk,	–	–	1	–
Cerebro-spinal meningitis.	Douglas,	–	1	–	–
	Spencer,	–	1	–	–
Total,		–	2	–	–

REPORT ON INSPECTION OF FOOD AND DRUGS.

Laboratory Examinations of Food and Drugs.

The following summary presents the results of the laboratory examinations during the month of September, 1913, of samples of food and drugs collected by inspectors of the Board: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Butter,	1	1	2
Canned fish,	1	4	5
Confectionery,	1	–	1
Corn meal,	1	–	1
Cream,	5	–	5
Cream of tartar,	1	–	1
Drugs,	87	11	98
Flavoring extract: —			
Lemon,	1	–	1
Grape juice,	2	–	2
Ice cream,	46	3	49
Jams and jellies,	4	–	4
Milk,	381	151	532
Non-alcoholic drinks,	7	–	7
Total,	538	170	708

The samples of drugs found to be adulterated were spirit of nitrous ether, spirit of anise, spirit of camphor, spirit of peppermint and tincture of iodine.

The cities and towns in which samples were collected were: Arlington, Ayer, Blackstone, Boston, Brockton, Brookline, Cambridge, Canton, Chelsea, Danvers, Fall River, Framingham, Franklin, Gloucester, Hingham, Hudson, Lawrence, Lee, Littleton, Lowell, Milford, Nantucket, Natick, Newburyport, Northampton, Pittsfield, Revere, Richmond, Rockland, Salem, Sherborn, Somerville, Spencer, Springfield, Swansea, Waltham, Wareham, Watertown, Weston, Woburn.

Prosecutions for Violations of the Law relating to Food and Drugs.

Seventeen convictions were secured during the month of September, 1913, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Alfred H. Loring,	Hull,	Milk (total solids, 9.20).[2]
2	Fannie Arkin,	Revere,	Milk (total solids, 10.18).[1,3]
3	Ralph W. Coffin,	Mendon,	Milk (total solids, 11.60).[2]
4	Charles Higgins,	Hopkinton,	Milk (total solids, 12.20).[2]
5	Leo Givani,	Milford,	Milk (total solids, 10.76).[2]
6	John W. Johnson,	Milford,	Milk (total solids, 12.12).[2]
7	Walter Channing Cabot,	Nantucket,	Milk (total solids, 12.30).[3]
8	Alvin L. Dudley,	Weston,	Milk (total solids, 10.36).[1,2]
9	Alvin L. Dudley,	Weston,	Milk (contained flies).[1]
10	Frank O. Holagate,	Nantucket,	Milk (total solids, 12.12).[2]
11	Thomas L. Mason,	Swansea,	Milk (total solids, 11.50).[3]
12	Thomas L. Mason,	Swansea,	Milk (total solids, 9.66).[2]
13	Lester Hull,	Nantucket,	Oleomargarine (no sign in store, "Oleomargarine sold here").
14	Lester Hull,	Nantucket,	Oleomargarine (no sign on container)
15	Henry Todd,	Nantucket,	Ice cream (fat, 3.58).
16	Bushway Ice Cream Co.,	Waltham,	Ice cream (fat, 4.48).
17	Bushway Ice Cream Co.,	Waltham,	Ice cream (fat, 4.34).

[1] Appealed. [2] Watered. [3] Skimmed.

Fines imposed, $360.

List of Adulterated or Improperly Labeled Foods, etc., for September, 1913.

The following shows the adulterated or improperly labeled foods during the month of September, 1913: —

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
12144–q	Spirit of peppermint,	William A. Phillips, Rockland, Mass.,	1 per cent. of U. S. P. strength.
12148–q	Spirit of camphor,	J. L. Hunt Co., Hingham, Mass.,	85 per cent. of U. S. P. strength.
3732–R	Milk,	John R. Porter, Woburn, Mass.,	Total solids, 10.60 per cent.; fat, 3.10 per cent.; contained added water.
3734–R			Total solids, 10.30 per cent.; fat, 3.50 per cent.; contained added water.
3736–R			Total solids, 10.80 per cent.; fat, 3.50 per cent.; contained added water.
3604–R	Milk,	G. Fred Wilde, Jr., Littleton, Mass.,	Total solids, 9.94 per cent.; fat, 2.80 per cent.; contained added water.
3606–R			Total solids, 10.00 per cent.; fat, 2.80 per cent.; contained added water.
3608–R			Total solids, 10.04 per cent.; fat, 2.80 per cent.; contained added water.
3610–R			Total solids, 9.97 per cent.; fat, 2.80 per cent.; contained added water.
3612–R			Total solids, 10.05 per cent.; fat, 2.80 per cent.; contained added water.
3614–R			Total solids, 10.06 per cent.; fat, 2.80 per cent.; contained added water.
3616–R			Total solids, 10.04 per cent.; fat, 2.80 per cent.; contained added water.
3618–R			Total solids, 10.05 per cent.; fat, 2.80 per cent.; contained added water.
3560–R	Milk,	J. King Rogers, Gloucester, Mass.,	Total solids, 9.66 per cent.; fat, 2.60 per cent.; contained added water.

List of Adulterated or Improperly Labeled Foods, etc., for September, 1913 — *Concluded.*

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
3546-R			Total solids, 11.74 per cent.; fat, 3.60 per cent.; contained added water.
3548-R			Total solids, 11.74 per cent.; fat, 3.70 per cent.; contained added water.
3550-R	Milk, . . .	George C. Nugent, Gloucester, Mass., . .	Total solids, 11.74 per cent.; fat, 3.80 per cent.; contained added water.
3552-R			Total solids, 11.74 per cent.; fat, 3.60 per cent.; contained added water.
3554-R			Total solids, 11.76 per cent.; fat, 3.60 per cent.; contained added water.
3538-R	Milk, . . .	Martha W. Thomas, Gloucester, Mass., .	Total solids, 11.34 per cent.; fat, 3.80 per cent.; contained added water.
3540-R			Total solids, 10.70 per cent.; fat, 3.00 per cent.; contained added water.
22203			Total solids, 9.66 per cent.; fat, 3.20 per cent.; contained added water.
22204			Total solids, 9.76 per cent.; fat, 3.25 per cent.; contained added water.
22206			Total solids, 9.92 per cent.; fat, 3.20 per cent.; contained added water.
22207			Total solids, 10.16 per cent.; fat, 2.50 per cent.; contained added water.
22208			Total solids, 10.46 per cent.; fat, 2.70 per cent.; contained added water.
22209			Total solids, 10.50 per cent.; fat, 2.90 per cent.; contained added water.
22210			Total solids, 10.15 per cent.; fat, 3.20 per cent.; contained added water.
22126			Total solids, 11.50 per cent.; fat, 4.80 per cent.; contained added water.
22127	Milk, . . .	Thomas L. Mason, Swansea, Mass., . .	Total solids, 9.20 per cent.; fat, 2.40 per cent.; contained added water.
22128			Total solids, 9.28 per cent.; fat, 2.70 per cent.; contained added water.

22129			Total solids, 9.56 per cent.; fat, 3.00 per cent.; contained added water.
22130			Total solids, 9.20 per cent.; fat, 2.40 per cent.; contained added water.
22131			Total solids, 11.46 per cent; fat, 4.80 per cent.; contained added water.
22132			Total solids, 10.80 per cent.; fat, 3.00 per cent.; contained added water.
22133			Total solids, 10.14 per cent.; fat, 3.20 per cent.; contained added water.
22134			Total solids, 9.34 per cent.; fat, 3.00 per cent.; contained added water.
22135			Total solids, 9.30 per cent.; fat, 3.00 per cent.; contained added water.
3530–R	Milk, . . .	Walter Channing Cabot, Nantucket, Mass., .	Total solids, 12.20 per cent.; fat, 3.00 per cent.; proteins, 3.40 per cent.; skimmed milk.
3532–R			Total solids, 12.30 per cent.; fat, 2.90 per cent.; proteins, 3.62 per cent.; skimmed milk.
4407–S	Milk, ...	James Foley, Pittsfield, Mass., ...	Total solids, 11.52 per cent.; fat, 3.70 per cent.; contained added water.
4377–S	Milk, ...	Albert Deinlein, Richmond, Mass., . . .	Total solids, 11.60 per cent.; fat, 3.70 per cent.; contained added water.
22078	Milk, ...	Calixte Desmarais, Fall River, Mass., . . .	Total solids, 9.30 per cent.; fat, 2.75 per cent.; contained added water.
4289–S	Milk, ...	Nicholas Kirchner, Pittsfield, Mass., . . .	Total solids, 12.60 per cent.; fat, 4.70 per cent.; contained added water.
4271–S	Milk, ...	Silvia Dallava & Co., Pittsfield, Mass., . . .	Total solids, 11.48 per cent.; fat, 3.60 per cent.; contained added water.

REPORT ON INSPECTION OF DAIRIES.

During the month of September, 1913, 542 dairies were examined in the following places: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Boylston,	3	2	66.67	1	33.33
Third inspection,	15	10	66.67	5	33.33
Fourth inspection	1	1	100.00	–	–
Dana,	4	2	50.00	2	50.00
Grafton,	15	7	46.67	8	53.33
Second inspection,	4	3	75.00	1	25.00
Third inspection,	21	12	57.14	9	42.86
Fourth inspection,	3	1	33.33	2	66.67
Groton,	6	6	100.00	–	–
Second inspection,	1	1	100.00	–	–
Third inspection,	1	1	100.00	–	–
Holden,	15	10	66.67	5	33.33
Second inspection,	5	3	60.00	2	40.00
Third inspection,	22	15	68.18	7	31.82
Hubbardston,	7	2	28.57	5	71.43
Second inspection,	7	4	57.14	3	42.86
Third inspection,	12	10	83.33	2	16.67
Lancaster,	2	1	50.00	1	50.00
Leominster,	19	10	52.63	9	47.37
Third inspection,	38	22	57.89	16	42.11
Milton,	–	–	–	–	–
Second inspection,	1	1	100.00	–	–
New Salem,	3	1	33.33	2	66.67
Second inspection,	1	–	–	1	100.00
Northborough,	1	1	100.00	–	–
Petersham,	–	–	–	–	–
Second inspection,	12	6	50.00	6	50.00
Princeton,	15	10	66.67	5	33.33
Second inspection,	1	1	100.00	–	–
Third inspection,	12	10	83.33	2	16.67
Quincy,	–	–	–	–	–
Fifth inspection,	1	–	–	1	100.00
Rutland,	8	8	100.00	–	–
Second inspection,	7	6	85.71	1	14.29
Third inspection,	16	12	75.00	4	25.00
Southborough,	1	1	100.00	–	–
Second inspection,	4	4	100.00	–	–
Third inspection,	6	6	100.00	–	–
Fourth inspection,	23	22	95.65	1	4.35
Sixth inspection,	1	–	–	1	100.00
Sterling,	22	17	77.27	5	22.73
Second inspection,	8	7	87.50	1	12.50
Third inspection,	66	42	63.64	24	36.36
Fourth inspection,	3	2	66.67	1	33.33
Stoughton,	–	–	–	–	–
Third inspection,	1	1	100.00	–	–

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Tewksbury,	10	3	30.00	7	70.00
Third inspection,	6	4	66.67	2	33.33
West Boylston,	11	6	54.55	5	45.45
Second inspection,	15	10	66.67	5	33.33
Third inspection,	23	18	78.26	5	21.74
Fourth inspection,	1	1	100.00	–	–
Westborough,	7	4	57.14	3	42.86
Second inspection,	9	5	55.56	4	44.44
Third inspection,	30	23	76.67	7	23.33
Fourth inspection,	16	15	93.75	1	6.25

Total number of dairies examined,	542
Number found to be free from objectionable conditions,	370
Number concerning which letters were sent,	172
Total number of conditions to which attention was called,	518
Percentage of dairies which passed inspection,	68.27

In addition to the above, 93 dairies were visited at which the sale of milk had been discontinued; also 43 dairies were reported as producing less than 20 quarts of milk a day.

Included in the total number of dairies visited were 149 which had recently started in the milk-producing business and were inspected for the first time.

The names of the owners of the dairies found to be worthy of commendation follow: —

Boylston.

Class A.

Hastings, W. H.‡

Class B.

Bannister, Seth F.
Bigelow, E.
Button, Charles E.‡
Cutler, C. E.‡
Falby, William H.§
Flagg, (Mrs.) Jennie L.‡
Garfield, J. B.‡
Hakala, (Mrs.) M. S.‡
Longley, (Mrs.) O. E.‡
Prouty, George H.‡
Sherer, C. T.‡
"Town Farm"‡

Dana.

Class B.

Doubleday, C. W.
Doubleday, Frank A.

Grafton.

Class A.

Nelson, A. B.‡ ||

‡ Third inspection. § Fourth inspection. || Reported favorably on all previous inspections.

Class B.

Adams, Joseph ‡
Anderson, A.
Brooks, G. B.‡
Carson, Robert R.
Clark, F. L.
Estabrook, Edward A. §
Greaney, David ‡
Hanson, E.
Houghton, H. E.
Johnson, J. Frank * †
Kearney, E. M.
Lecœuvre, N. E.
Leland, H. R.‡
Olsen, John ‡
Parker, E. S.* †
Prescott, F.* †
Robbins, George W.‡ ||
Stowe, L. A.‡
Strout, W. C.‡
"Town Farm" ‡ ||
Wheeler, (Mrs.) Hannah ‡
Worcester, J. C.‡

Groton.

Class B.

Bixby, William V.‡
Clark, George H.
Dodge, George L.
Hennigan, John
Lawrence, Charles
Lawrence, James * †
"Town Farm"
Wharton, W. P.

Holden.

Class A.

Chamberlin, B. M.
Madsen, Mads ‡

Class B.

Agar, C. H.‡
Anderson, Fred *
Anderson, Otto F.‡ ||
Carlson, (Mrs.) Gustavus ‡
Carlson, Ludwig
Clark, (Mrs.) E. C.‡
Condon, A. O.‡ ||
Cook, F. E.* †
Coskey, M.
Howe, Thomas W.‡ ||
Hubbard, F. C.‡
Johnson, Lewis
Jordan, C. B.‡
Kronoff, C. M.
Lake, (Mrs.) M. B.
Lindstrom, Carl
Mason, William ‡
Moulton, H. N.‡ †
Nelson, A. R.
Nelson, S.‡ ||
Otterson, B.‡
Paine, H. L.
Turner, Ernest G.‡
Wallace, E.
Walstrom, C. P.*
Welch, James E.‡

Hubbardston.

Class B.

Bennett, B.‡
Bickford, Silas C.‡
Brigham, H. E.‡
Claflin, H. L.‡ ||
Clark, Warren ‡ ||
Driscoll, Robert
Erickson, Andrew *
Flagg, J. F.‡
Hale, L. W.
Lufkin, Charles O.*
McCarthy, Thomas ‡
Savage, J. P.‡
Slade, G. W.‡
Tilton, Edgar ‡ ||
Weeks, Kuste *
White, Royal E.* †

Lancaster.

Class B.

Harper, William

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

Leominster.

Class A.

Chapin, E. H.
Doyle, B. W.

Class B.

Adams, E. F.‡
Boutelle, E. H.‡
Boyd, W. H.
Carter, Everett M.‡ ||
Charron, Frank ‡
Conrey, Charles
Derby, Ralph W.
Divol, Charles H.‡ †
Divol, Hollis ‡
Harris, Russell ‡ ||
Hill, Thomas J.‡
Jefferson, George ‡
Lander, Rufus K.
Lincoln, George E.
Pierce, E. T.‡ ||
Powers, Edward U.‡
Powers, Ezra W.‡ ||
Richard, Paul ‡
Richardson, L. L.‡
Robbins, T. L.‡ ||
Severance, E.‡ ||
Smith, A. A.‡ ||
Steyer, Arthur
Stone, Charles N.‡ ||
Tatro, Peter ‡
"Town Farm" ‡
Walker, Charles W.‡ †
Washburn, Paul ‡
Wheeler, D. E.
Whitney, F. A.

Milton.

Class AA.

Lamb, H. A.* †

New Salem.

Class B.

Ballard, Daniel

Northborough.

Class B.

Brigham, Herbert A.

Petersham.

Class B.

Amidon, Joseph * †
Bassett, W. A.*
Coolidge, Charles S.* †
Spooner, Benjamin W.* †
Stone, W. Herbert *
Wheeler, John *

Princeton.

Class A.

Brooks, W. S.‡
Bryant, W. H.‡

Class B.

Chamberlin, A. B.‡
Chandler, John
Clark, J. W.‡
Clark, L. E.
Cronin, B.‡
Delano, H. C.
Drury, C.
Gates, M.‡
Gleason, H.
Harrington, J. C.‡
Hastings, Herbert B.*
Houghton, H. P.
Hubbard, E. E.
Myrick, R. S.
Olsen, Alfred ‡ ||
Pratt, Irving
Rugg, Charles
Thompson, Charles H.‡
Way, Frank ‡

Rutland.

Class A.

Campbell, Charles J.* †
Potter, P. W.‡ ||
Welch, J. H.‡

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
|| Reported favorably on all previous inspections.

Class B.

Barton, J. R.
Bowen, (Mrs.) C. E.*
Brown, Arthur
Cullen, M. J.‡
Delehanty, P.‡ ||
Fisk, John
Forbush, F. D.*
George, H. R.‡
Grant, Malcomb
Healey, William E.‡ †
Herrick, Dr.‡ †
Jenkins, G. N.
Latowne, L.‡
Morasky, (Mrs.) Nellie
Nordquist, L. M.‡ †
Robinson, H. P.‡ †
Smith, D. A., & Son
Steinwick, Peter
Tapoli & Tarkiaüma *
Taylor, Geoige ‡
Temple, W. C.* †
Upham, W. R.*
Wheeler, Edward ‡ †

Southborough.

Class AA.

Deerfoot Farms Company § ||

Class B.

Baker, A. L.§ ||
Brewer, N. F.§
Byard, J. L.‡
Byrnes, Miles §
Caldwell Brothers * †
Cowern, Arthur H.§
Cowern, H. G.§
Eaton, Harris D.§
Fay, F. A.§
Fay, (Est. of) J. A. J.§
Finn, Lawrence §
Gilmore, A.‡ ||
Howes, S. H.* †
Ives, S. E. & G. M.
Leland, (Mrs.) C. F.‡ ||
Lincoln, Harry R.‡ ||
Martin, M. M.* †
Mauro, P.§
McClintock, William ‡ ||
McHale, James §
Miller, George ‡ †
Newton, L. W.§
Newton, W. C.§
O'Brien, John §
Onthank, William T.§
Potter, Henry S., Jr.§
Roach, Martin §
Shaft, H., & Bassett, F.§
Taylor, Leroy §
Toombs, A. J.* †
Ulman, D.§
Wells, E. C.§

Sterling.

Class A.

Bassett, George W.§ ||
Gleason, Walter D.‡
Pratt, J. F.‡ ||

Class B.

Alden, A. O.‡
Broderick, William E.‡
Buttrick, Clarence A.‡
Buttrick, (Mrs.) Mary A.‡
Buttrick, (Miss) Mary E.‡ ||
Calcia, Fred
Calcia, John
Chandler, C. H.‡
Clark, William F.*
Connolly, William J.‡
Coombs, A. W.*
Corkum, D. W.‡
Coughlin, J. H.
Coyne, M.‡
Davis, Jonathan ‡
Dee, John ‡
Dolphin, James
Elliott, George ‡
Fitch, G. A.‡
Flanagan, (Mrs.) Mary ‡
Ford, Edward ‡
Fuller, Clarence ‡
Gates, J. H.
Gayer, Joseph ‡
Gleason, Charles M.
Gould, A. H.‡ †
Gould, W. W.
Graham, Edward
Heywood, E. K.‡
Hill, F. F.
Jenks, Henry B.‡
Johnston, Robert ‡
Kelly, Michael ‡
Kendall, Luther B.‡ ||
Kingsbury, W. G.‡
Lewis, C. H.‡
Lovell, O. F.
Lyons, (Mrs.) H. E.
Magee, Ralph E.‡
Mosher, A. J.‡
Nelson, Henry B.
Newhall, A. W.‡
Newhall, O. H.‡
Patton Brothers ‡
Pedersen, Soren ‡
Place, Charles A.‡
Robinson, C. A.
Saunders, S. S.§
Saunders & Cutler
Smith, J. B.‡
Stephenson, Henry E.‡
Stevens, Ralph * †
Stewart, George F.
Stewart, George S.*
Stockwell, Susan ‡
Thompson, William *
Tuttle, A.‡ †
Tyler, Nathaniel P.
Wilder, Arthur S.*
Wilder, A. W.‡ ||
Wilder, Fred E.
Wilder, Harry M.‡
Wilder, H. S.‡
Wilder, J. F.*
Wilds, J. S.‡

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

Stoughton.

Class B.

Porter, Charles S.‡ †

Tewksbury.

Class A.

Cameron, Hugh ‡ †

Class B.

Burtt, B. W.‡
Carter, Frank I.‡ ||
Dobbs, R. S.‡
Folsom, W. H.
O'Neil, P. J.
Riley, John

West Boylston.

Class A.

Keith, John F.‡
Scarlett, Andrew J.‡
Smalley, A. G.‡
Snow, Albert N.* †
"Town Farm" ‡

Class B.

Adams, William E.
Andrews, William A., Jr.§
Antonio, Fortunato
Bancroft, A. P.‡
Blodgett, W. H.‡ ||
Case, Herbert E.*
Cavanaugh, Lawrence ‡
Chase, Elwyn I.
Dion, Leon *
Fairbanks, Edwin C.‡
Fairbanks, Henry H.* †
Farmer, Burton E.‡
Feldman, Mitchell ‡
Fergerson, M. H.
Frost, (Dr.) E. E.* †
Goodale, Aaron ‡
Goodwin, Charles H.
Hall, William C.
Harmon, A. H.*
Hunting, Arthur I.‡
Lundgren, P.‡
Moran, James ‡
Navaroli, Johann ‡
Oleson, John B.* †
Parker, William ‡
Rater Brothers * †
Robbins, J. W.* †
Safer Brothers ‡
Surabian, John * †
Wood, Willie B.‡

Westborough.

Class A.

Cook, B.
Parker, R. F.‡

Class B.

Adams, H. D.§
Avekin, Hagop
Bardwell, Albert M.§
Bartlett, Frank V.§ ||
Bayliss, George ‡
Bonner, J. A.
Braley, Waldo ‡ ||
Chamberlain, C. A.
Chamberlain, William E.§ ||
Clark, (Mrs.) Elizabeth E.* †
Davis, E. A.§
Engvall, A.‡
Estey, Edward G.§
Fay, Anna S.* †
Fay, Howard B.* †
Fay, J. W.‡
Fay, Walter E.§
Ferguson, Henry ‡
Fisher, J. A.‡ ||
Gilmore, J. A.‡
Granger, Edward §
Hahn, Louis J.‡ ||
Harrington, C.§ ||
Hero, B. W.‡ ||
Hodge, L. C.‡ ||
Lyons, W. F.§
McTaggart, Walter §
Murphy, Dennis H.‡
Nichols, H. H.* †
Nichols, H. M.‡
Nichols, Walter F.‡
Nourse, Arthur M.‡
Patterson, H. N.‡
Pollard, Moses §
Poskitt, T. W.§ ||
Robinson, W. W.‡
Stanford, Frank ‡
Stearns, Austin *
Stone, H. G.‡
Tufts, A. O.‡
Vinal, J. P.§
Walkup, E. L.‡
Ward, (Mrs.) Anna §
Warren, W. H.‡
York, A. W.‡ ||

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

THE SCHOOL FOR HEALTH OFFICERS[1] OF HARVARD UNIVERSITY AND THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

By Milton J. Rosenau, M.D., Boston, Mass.

For the first time in the history of Harvard University and the Massachusetts Institute of Technology these two institutions of learning have joined hands in a definite and material way that bodes good for the present and better for the future. The two institutions have long been on a footing of friendly rivalry, but despite various attempts to bring about material co-operation, nothing very definite was accomplished beyond an occasional interchange of professors and other friendly courtesies. The School for Health Officers, which is to be conducted jointly by Harvard and Technology, will be a definite bond to rivet the two institutions together. The department of preventive medicine and hygiene of the Harvard Medical School, the department of sanitary engineering of the Graduate School of Applied Science of Harvard, and the department of biology and public health of the Massachusetts Institute of Technology, will now have a common purpose, — that is, to train men to officer the public health militia.

Health administration in this country lags largely for want of trained leadership. The call to public health is loud and clear. Preventive medicine is the watchword of the hour and the people are asking: "If disease is preventable, why is it not prevented?" They are not satisfied with promises, but demand results; this is as it should be. It is now recognized that the orthodox training leading to the degree of M.D. does not necessarily fit a man for the position of health officer. The average practitioner learns little concerning vital statistics, sanitary engineering, water purification, sewage disposal, disinfection, forensic medicine and the making and breaking of health laws. The public health officer looks upon disease in the large, and is less interested in the individual case, which is the chief concern of the practicing physician. The health officer looks upon disease with an eye to preventing its spread; in order to do so he must know its mode of transmission. The practicing physician, on the other hand, looks upon disease with a view to affording relief or cure, and his principal interest, therefore, is in diagnosis and treatment. The public health officer must also be a specialist. Public health administration is, indeed, a profession which bends its knee to none, so far as ideals and service are concerned.

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[1] Reprinted from the Harvard Graduates' Magazine for September, 1913.

It must not be understood that the health officer is concerned only with stamping out the communicable diseases. There are many preventable defects which may be reached, especially in school children, and there is the general conduct of life which makes not only for longevity but for maximum efficiency. The present-day health officer must also concern himself with the problems of heredity and eugenics. He must further concern himself with questions of immunity, and must make every effort to help the conditions which menace work people. Industrial hygiene and the diseases of occupation form a large and important chapter in the volume of preventive medicine. Furthermore, the people must depend upon the health officer to guard the quality of the food, including the purity of the milk and the cleanliness of the water which they consume. The health officer must therefore be familiar with the sanitary sciences in addition to the medical sciences, both of which, in the broad biological sense, underlie the foundation of successful health administration.

The School for Health Officers will be an administrative entity under the charge of an administrative board. The members of this board are Prof. William T. Sedgwick of the Massachusetts Institute of Technology, Prof. Milton J. Rosenau of the Harvard Medical School and Prof. George C. Whipple of the Graduate School of Applied Science, Harvard University. Professor Rosenau has been appointed director of the school, Professor Sedgwick is chairman of the Administrative Board and Professor Whipple is secretary.

Requirements for Admission.

Graduates in medicine of Harvard University and other recognized medical schools will be admitted to the School for Health Officers upon their records, and registered as candidates for the Certificate of Public Health. Bachelors of science in biology and public health of the Massachusetts Institute of Technology [1] and other recognized institutions will likewise be admitted and registered.

Masters of civil engineering of Harvard University [2] who have specialized in sanitary engineering, and Bachelors of science in sanitary engineering of the Massachusetts Institute of Technology and other recognized institutions, who lack the necessary preparation in medical and other sciences, will likewise be admitted to the school upon their records, but will be required to spend at least one year in preparation before being accepted as candidates for the Certificate of Public Health.

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[1] See p. 97 of the M. I. T. Program, June, 1913.

[2] See p. 642 of the Harvard University Catalogue.

Other graduates of colleges or technical or scientific schools will be admitted to the school without examination, provided their collegiate courses have included adequate instructions in physics, chemistry, biology, French and German; but they will be required to spend two or more years in preparation before being accepted as candidates for the Certificate of Public Health.

Applications for admission to the school will also be considered from those who have spent at least two years in a recognized college or technical or scientific school and have pursued satisfactory courses in physics, chemistry, biology, French and German, and will likewise be considered from persons of unusual experience or special qualifications.

Special students not candidates for the Certificate of Public Health who desire to fit themselves for some special field will be admitted to the school and may take any course or courses for which they are properly qualified on approval of the administrative board.

While the medical degree is not a prerequisite for the Certificate of Public Health, candidates are advised to obtain the medical degree before specializing in public health work. Experience teaches that preferment for position and advancement to the higher positions come more readily to those who have a medical degree.[1]

Schedule of Courses.

No prescribed curriculum will be required of candidates for the Certificate of Public Health, but they will be required to elect a schedule of courses to meet their individual needs. Assistance in making up this schedule of studies may be obtained from the members of the administrative board or the instructing staff. In general, the choice of studies must be such that the candidate on the completion of his course will have covered in a broad way the knowledge requisite for the varied duties of a public health officer. To be entitled to the Certificate of Public Health candidates must have satisfactorily completed courses in the following fundamental subjects: anatomy, physiology, pathology, biological chemistry, sanitary biology, preventive medicine and hygiene, and sanitary engineering. Inasmuch as the school is conducted and the certificate awarded by Harvard University and the Massachusetts Institute of Technology in co-operation, it is expected that candidates for the Certificate of Public Health will include in their schedule courses in both institutions.

The courses available in the school are not restricted to those stated in the catalogue, but may include those in any department of Harvard

[1] These requirements have not yet received the final approval of the administrative board. It is likely that some changes will be made, although these changes will not be radical.

University or the Massachusetts Institute of Technology, provided such work is in harmony with the objects of the school and meets with the approval of the instructor in charge of the course and of the administrative board. Certain special courses will be given by instructors not otherwise connected with either institution, and practical work may be taken in city, State and national health departments and in the hospitals of Boston, but such work must receive special approval in each instance and be conducted under suitable restrictions.

The Need of Trained Leadership.

It is recognized that the requirements for public health service are broad and complicated, and that the country needs leaders in every community fitted to guide and instruct the people in the art of hygienic living; qualified to direct the expenditure of energy, time and money in public health work into fruitful channels; and able to initiate plans to meet novel conditions as they arise. It is the object of the School for Health Officers to provide the scientific groundwork of sanitary knowledge which underlies an efficient health administration.

The general plan is to offer a thorough training for the duties which a health officer may be called upon to perform. This will not replace the work of this character now being done either at Harvard or at Technology, but special courses and special arrangements of courses will be organized in order to prepare men for the profession of health officer, especially for administrative and executive positions in public health service, and also to fit men to become members, secretaries, agents or inspectors of boards of health. Those who fulfil all the requirements will be given a certificate. It is not proposed, for the time being, to offer a degree. The School for Health Officers will not interfere in any way with the present Doctor of Public Health degree (Dr.P.H.) now offered by Harvard University. This will continue as heretofore.

The demand for men with a proper training to supervise the health of every community will be very great. Everywhere the importance of this matter is coming to be more thoroughly recognized. The public health service of the national government, the State and municipal boards of health, are constantly widening the scope of their activities and will need many additional skilled workers. Smaller communities which have boards of health composed of men not specially trained for the work will require expert assistants. Communities that are too small to support health officers are now being grouped into districts under the charge of an efficiently trained man in a system of co-operative sanitation. It will take an army of trained health workers

to meet the demand. Harvard University and the Massachusetts Institute of Technology have combined to establish a School for Health Officers designed to meet this demand.

A copy of the "Catalogue and Announcement of the School for Public Health Officers" will be sent upon request. Address Roger Pierce, Harvard University, Cambridge, Mass.

OPINION OF THE ATTORNEY-GENERAL AS TO THE LABELING OF COLD STORAGE EGGS.

The Commonwealth of Massachusetts,
Department of the Attorney-General, Boston, Sept. 24, 1913.

Mark W. Richardson, M.D., *Secretary, State Board of Health.*

Dear Sir: — You have requested my opinion upon the question whether the provisions of St. 1913, c. 538, require that the basket, box or other container in which eggs are placed when delivered by a retail dealer in eggs to a consumer, upon orders taken at the home of the consumer or by telephone or by any other method by which the consumer does not have an opportunity to see the eggs in a marked container in the store, shall be marked with the words, "Cold storage eggs."

St. 1913, c. 538, § 1, provides as follows: —

Whenever eggs that have been in cold storage are sold at retail, or offered or exposed for sale, the basket, box or other container in which the eggs are placed shall be marked plainly and conspicuously with the words "cold storage eggs" or there shall be attached to such container a placard or sign having on it the same words. If eggs that have been in cold storage are sold at retail or offered or exposed for sale without a container, or placed upon a counter or elsewhere, a sign or placard, having the words "cold storage eggs" plainly and conspicuously marked upon it, shall be displayed in, upon or immediately above the said eggs; the intent of this act being that cold storage eggs sold at retail or offered or exposed for sale shall be designated in such a manner that the purchaser will know that they are cold storage eggs. The display of the words "cold storage eggs," as required by this act, shall be done in such a manner as is approved by the state board of health.

For the purpose of preventing evasion of the requirements of the statute through divergent interpretations of its provisions, the Legislature expressly stated the intent of the law to be that cold storage eggs *sold or offered or exposed for sale* at retail should be designated in

such manner as to give the purchaser notice of the fact that they are cold storage eggs. If a purchaser should not go to the store to make his purchase, obviously the expressed intent of the law would not be satisfied if the container in which the eggs were delivered were not marked in such a manner as to give him notice. The construction which requires the container in which the eggs are delivered to the consumer so ordering the eggs to be marked with the words "cold storage eggs", is, therefore, not only demanded by the words of the first sentence of the section, which require not only that the container of eggs *which are offered or exposed for sale* but also the container of eggs *which are sold* shall be marked plainly and conspicuously, but it is also the only construction which gives effect to the clause stating the intent of the law.

Very truly yours,

JAMES M. SWIFT,
Attorney-General.

VENEREAL DISEASES:[1] THE ATTITUDE OF THE DEPARTMENT OF HEALTH (NEW YORK CITY) IN RELATION THERETO.

By Hermann M. Biggs, M.D., General Medical Officer, Department of Health.

On Feb. 20, 1912, the Board of Health of the city of New York adopted a series of resolutions requiring the full notification of all cases of venereal disease from public institutions, and requesting physicians to notify their private cases by number. The Board also provided for the application of the Wassermann test for syphilis, the complement fixation test for gonorrhea, and for the examination of fresh smears for spirochetes and gonococci. This action was taken after very mature deliberation and with some reluctance, and only after the proposal had been unanimously approved by the medical advisory board.[2] The subject had been under discussion for more than three years, and the Board of Health fully realized the many difficulties of the problem presented in the sanitary surveillance of these diseases. The resolutions were finally adopted only after the Board of Estimate and Apportionment had provided funds for the erection of a pavilion

[1] Reprinted from Reprint Series, Department of Health of the city of New York, No. 6, May, 1913.

[2] The members of the advisory board are: Dr. Joseph D. Bryant, Dr. William M. Polk, Dr. Abraham Jacobi, Dr. T. Mitchell Prudden, Dr. A. Alexander Smith, Dr. J. Winters Brannan, Dr. John A. McCorkle, Dr. Francis P. Kinnicutt, Dr. L. Emmett Holt, Dr. Glentworth R. Butler, Dr. Simon Flexner, Dr. Walter B. James and Dr. Alvah H. Doty.

at Riverside Hospital for the care of such cases of venereal disease as the Department of Health might be called upon to isolate and treat.

The Board was influenced in taking the action, as described above, by the following considerations: —

First. — The venereal diseases are infectious and highly communicable. They are also preventable. They constitute a very serious menace to the life and health of the people of the city of New York. The Board of Health is charged by law with the control and prevention of such diseases. The logic of the situation, therefore, demanded that action should be taken.

Second. — As is well known, sanitary authorities in the past have not attempted to deal with these diseases, because the sanitary problems have been inextricably interwoven with vice and immorality, and because many attempts have been made to deal with the latter problems in many cities in various parts of the world by police regulations. The moral sense of the community here has seemed to be antagonistic to any efforts at police regulation, and, moreover, the methods adopted abroad have generally given most unsatisfactory results.

Third. — Although no serious attempts have ever been made by the sanitary authorities of a great city to deal with this problem, yet as it seems to be the almost universal opinion that police regulations have generally failed, after careful consideration, the Board of Health decided that it was the duty of the Department of Health to attempt to deal with the purely sanitary features of the problem from the public health standpoint, while the social and moral phases were entirely ignored.

Fourth. — It was believed by the Board of Health that the more enlightened portion of the medical profession and of the laity were in an attitude of mind, not only to accept without serious protest an earnest attempt at an improvement in existing conditions through the application of scientific sanitary procedures, but to extend general support and commendation to such a course.

The resolutions adopted by the Board of Health read as follows: —

Whereas, The venereal diseases are infectious, communicable and preventable and constitute a serious menace to the public health, thus properly coming under the charge of the public health authorities, and

Whereas, It is well established that no administrative control of such diseases is possible without a system of notification and registration, associated with provision for the municipal care of patients unable or unwilling to place themselves under proper medical care and to take the precautions necessary to prevent the infection of others, be it therefore

Resolved, First. — That on and after May 1, 1912, the superintendents or other

officers in charge of all public institutions such as hospitals, dispensaries, clinics, homes, asylums, charitable and correctional institutions, including all institutions which are supported in whole or in part by voluntary contributions, be required to report promptly the name, sex, age, nationality, race, marital state and address of every patient under observation suffering from syphilis in every stage, chancroid, or gonorrheal infection of every kind (including gonorrheal arthritis), stating the name, character, stage and duration of the infection, the date and source of contraction of the infection, if obtainable, and,

Second. — That all physicians be requested to furnish similar information concerning private patients under their care, excepting that the name and address of the patient need not be reported.

Third. — That all information and all reports, in connection with persons suffering from these diseases, shall be regarded as absolutely confidential, and shall not be accessible to the public nor shall such records be deemed public records.

Fourth. — That the Department of Health shall provide facilities for the free bacteriological examination of discharges for the diagnosis of gonorrheal infections, and also shall provide, without charge, vaccines for the treatment of such infections, and

Fifth. — That the Department of Health shall undertake to make, without charge, the Wassermann and Noguchi tests for the diagnosis of syphilis and examine specimens for spirochetes.

Sixth. — That these diagnostic and therapeutic facilities be extended only when the data required for the registration of the case be furnished by the physician treating the patient, and

Seventh. — That the department provide and distribute circulars of information in relation to these diseases.

The initial step taken by the Board of Health for the control of these diseases was essentially the same as that previously followed with reference to pulmonary tuberculosis, excepting that the measures are more restricted in character in connection with the venereal disease. A compliance with the new regulations has been, perhaps, less general even than was the case in the beginning with reference to pulmonary tuberculosis, and the opposition has been greater.

The superintendents and the boards of trustees of some of the larger institutions of the city have failed to comply with the new regulations of the department, excusing their action on the ground that the notification of cases as required by the Department of Health involves so much clerical work that it is impossible for them to comply, as the physicians cannot do the work and no clerical staff is available for this purpose. Other institutions have declined to notify their cases because they were not in sympathy with the purpose and spirit of the regulations.

The existence of large numbers of cases of venereal disease, and the terrible effects produced by them, is universally admitted. Still the medical boards of three large hospitals of the city have appointed committees to protest against the attitude of the Department of Health, and a joint committee representing them has addressed a communication to his honor the mayor, asking for his interference.

Such opposition and such criticism were fully anticipated, and much more is likely to follow. The progress of sanitation, like the warfare of science, has been the history of a continuous struggle against opposition, carried on in the name of law, religion, personal rights or expediency. The history of this struggle, like that of previous ones in science and sanitation, will end finally in a long-delayed success, although the difficulties of the problem presented are much greater than has been the case in most previous instances.

In connection with the opposition which has developed to the action of the Department of Health, and the attitude which has been adopted by some authorities, it may be well to recall the history of the experience of the department in its tuberculosis work. The movement for the prevention of tuberculosis, which has long since become worldwide, was inaugurated by the New York City Department of Health in 1887, when Dr. Joseph D. Bryant was commissioner of health. It did not gain much impetus, however, until 1893. Active work began in 1894, when 4,166 cases of pulmonary tuberculosis were reported from the old city of New York and 511 specimens of sputum were examined; premises vacated by tuberculous patients were disinfected and an extensive educational campaign was inaugurated.

It may not be amiss to recall the fact that as late as 1898 and 1899, special legislative committees were appointed by the New York County Medical Society and by the New York County Medical Association, which were instructed to obtain a repeal of the act of the Legislature under which the Department of Health derived its power to deal with the tuberculosis problem. A special committee was also appointed by the Academy of Medicine, which, after prolonged deliberation, declared "the action of the Department of Health, with reference to tuberculosis, is inexpedient and inadvisable." I think, in view of the history of the campaign since that time, and the present attitude of the public and the medical profession toward tuberculosis, it may properly be said that the action of these committees was ill-advised.

I believe that ultimately the result will be the same with reference to the sanitary surveillance of the venereal diseases now under discussion, but I realize as fully as any one can the enormous difficulties presented by the problem.

Nearly twenty years ago the Board of Health of New York City adopted a policy in relation to the control of infectious, communicable and preventable diseases. In effect it determined that every such disease properly came under its jurisdiction, and that any measures which contribute to the prevention, accurate diagnosis, proper sanitary surveillance, or the specific treatment of such diseases, become properly a function of the Department of Health. The Board has consistently followed this policy.

I believe that the attitude of the Board toward the venereal diseases is practically governed by this statement of its policy. It is prepared to register venereal diseases, to provide hospital care for those cases which cannot obtain care elsewhere, to assist in every way in its power in the diagnosis and sanitary surveillance of such diseases, and only *if necessary and only so far as it seems necessary,* will it undertake the treatment of these diseases.

An investigation made last year showed that with perhaps one or two exceptions the public clinics and dispensaries in this city did not *regularly* follow modern methods for the diagnosis and treatment of syphilis. As it had been satisfactorily shown, in the opinion of the Board, that early cases of syphilis in which the diagnosis is made by the examination for spirochetes, before the appearance of secondary symptoms, can be cured in the course of a few months, while in most cases subsequently the treatment must often be continued for years with even then a doubtful result, the Board of Health felt that it was incumbent upon it to provide means for such treatment, if the Board of Estimate and Apportionment would furnish the funds. The Board of Health, therefore, asked for funds to establish a clinic for the early diagnosis and specific treatment of syphilis, viz., by the administration of salvarsan. The Committee of the Academy of Medicine on Budgets and Hospitals did not approve of this action of the Board of Health, and insisted that efforts should be made to induce existing institutions to discharge their duty in this matter. The Board of Health, in view of this attitude, did not strongly press its request, and funds for the clinic were not granted.

I think that the medical profession and the laity do not fully understand what the attitude of the Department of Health is and has always been toward this and similar questions. The department does not desire and has never desired to assume any responsibility, nor do any work which is being properly done by any other authorities or agencies. The board has always received coldly the numerous suggestions made at various times to place under its jurisdiction other functions which, it believed, did not properly belong there, such as the administration

of the general public hospitals of the city, the work of the coroners, etc. The department does not wish *to treat* the venereal diseases if some other authorities will furnish proper and adequate facilities for this purpose.

Early in January of this year a circular letter was sent to every physician in New York City, requesting him to report the number of cases of venereal disease which had been under his care during the year 1912. Up to the present time the number of cases reported is as follows: —

Syphilis,	13,348
Gonorrhea,	24,980
Chancroid,	4,331
Total,	42,659

Let it be understood that these represent only the cases reported by 1,500 private physicians out of more than 8,000 in the city, and do not include those treated in public hospitals, dispensaries, etc. They naturally indicate only a small proportion of the cases actually under the care of the physicians of this city during the year. It is probable that a large percentage of these cases were in the active, infectious stage. I think that 200,000 would be much nearer the real number of cases developing in the city during 1912. These figures, however, give a very inadequate conception of the character of the problem which is presented by the venereal diseases and its enormous importance to the health, happiness and physical welfare of the people of the city of New York.

The Department of Health established a diagnosis venereal clinic in July, 1912, at the research laboratory at the foot of East Sixteenth Street, where it was conducted until about the 1st of January last, when it was transferred to the main offices of the Department of Health and connected with the diagnosis laboratories. Cases are examined only when they come with a request from the attending physician, unless the chief of the clinic can be convinced that there is no attending physician. The reports of the results are furnished *only* to the attending physician. A large percentage of the examinations consists in the application of the Wassermann test. Early in January an evening diagnosis clinic was established at 307 West Thirty-third Street, for the accommodation of persons who could not well leave their work during the day. This is held at present only one evening a week.

The total attendance since January 1 at the main clinic is 1,275, and has averaged 16 a day, while at the night clinic the average has been

6. The average number of cases reported daily, exclusive of the clinic, since the first of January, has been 37. We feel confident that the facilities offered by the Department of Health at these clinics for the diagnosis of these diseases will be much more widely used as soon as physicians have become gradually acquainted with their existence and usefulness to them.

I do not think that the importance of the educational influence of such bacteriological work can be overestimated, and this opinion is emphasized when one recalls the fact that but few dispensaries or outdoor departments in New York City were regularly doing such work last year. I do not know what the situation is in this respect at the present moment. The application of the tests for the diagnosis of the venereal diseases requires time, experience and adequate training, services which are not at the disposal of the poor, and the type of laboratory facilities which are generally not at the command of public dispensaries.

The line of development which the work of the Department of Health is likely to take cannot, as yet, be foretold, as this must depend upon many factors and conditions at present undetermined. I think that it is fairly certain, however, that the work in the diagnosis of these diseases will develop rather rapidly. Perhaps next to the bacteriological examinations, and in connection with registration, the most important feature of the work will be, as was the case in tuberculosis, educational in character. It seems to me fairly clear that this is certain to be a very important phase of the campaign.

The institutional care of active, highly infectious cases of the various forms of venereal disease is bound largely to increase. It is certainly most discreditable to the great city of New York that thus far only a few beds in two hospitals have been assigned to the care of these diseases. As they are infectious and readily communicable and most dangerous to the public health, I believe the Department of Health is under obligation to provide institutional care, unless some other authorities take action in the matter. I have already said the department has received funds to provide hospital beds for a limited number of cases.

No one who is familiar with the problem, I believe, has any doubt that prompt and efficient treatment will cause a very large reduction in the number of cases in which disability or death, directly or indirectly, results from venereal disease.

Conclusion.

It may be briefly said that the policy of the Department of Health toward these diseases, at present, comprises the following: —

First. — The development and extension of the system of registration as at present conducted.

Second. — The provision of adequate facilities for the early diagnosis and general supervision of all forms of venereal disease.

Third. — The institution of an extensive campaign of education in relation to sex hygiene, and the causes, prevalence, danger and results of such infections and the means for their prevention and treatment.

Fourth. — The provision of hospital accommodation for such cases as constitute a menace or which can find no facilities elsewhere for their care.

It is the firm conviction of those who have given much thought to this subject that by these and other similar measures, which may be later developed, a very important decrease may be brought about in the amount of sickness and death, directly or indirectly produced by the venereal diseases. It was this conviction which influenced the Board of Health in the adoption of the resolutions referred to in the beginning of this article.

I venture to say that when the anti-tuberculosis movement began in this city, some twenty years ago, no one anticipated the vast organization of social forces that would be developed to cope with this disease. As the campaign progressed, first one and then another agency was enlisted, and as the problems presented themselves they were met in the light of existing knowledge and experience. Exactly the same situation confronts us in the control of the venereal diseases, and while the initial steps seem quite clear, I do not for a moment hesitate to say that the further development of the campaign must await further knowledge, — knowledge to be obtained only through the results of experience.

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RETURNS OF DISEASES.

Cases of Diseases declared by the State Board of Health to be Dangerous to the Public Health.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

DISEASE.	Week ending — Oct. 4.	Oct. 11.	Oct. 18.	Oct. 25.	Total.
Diphtheria,	153	136	139	152	580
Measles,	59	56	99	71	285
Scarlet fever,	89	119	107	131	446
Typhoid fever,	93	99	108	66	366
Tuberculosis, pulmonary (or not classified),	127	138	94	118	477
Tuberculous meningitis,	3	2	4	4	13
Tuberculosis, other forms,	4	6	5	8	23
Cerebro-spinal meningitis,	5	1	–	4	10
Whooping cough,	43	23	28	41	135
Varicella,	31	32	38	47	148
Ophthalmia neonatorum,	49	60	37	41	187
Anterior poliomyelitis,	23	23	15	16	77
Smallpox,	–	5	1	–	6
Trachoma,	3	4	2	5	14
Tetanus,	–	1	1	1	3
Trichinosis,	–	–	–	2	2

Cases of Infectious Diseases not included in the Above Table.

[Cases not notifiable under the provisions of section 52 of chapter 75 of the Revised Laws.]

DISEASE.	Week ending — Oct. 4.	Oct. 11.	Oct. 18.	Oct. 25.	Total.
Mumps,	3	–	–	1	4
Erysipelas,	–	–	1	–	1

RETURNS OF DEATHS.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Cities and Towns of More than 10,000 Population.

[Under the provisions of chapter 210, Acts of 1913.]

Week ending Oct. 4, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	24[1] 27[2]	11[1] 12[2]	1[1] 2[2]	2[1] 2[2]	2[1] 2[2]	3[1] 3[2]	1[1] 1[2]	–	2[1] 3[2]	2[1] 2[2]
Worcester,	145,986	9	4	–	1	2	–	–	–	2	–
Fall River,	119,295	5	3	–	1	–	–	–	–	1	–
Lowell,	106,294	3	2	–	–	1	–	–	–	–	–
Cambridge,	104,839	–	–	–	–	–	–	–	–	–	–
New Bedford,	96,652	1	1	–	–	–	–	–	–	–	–
Lynn,	89,336	2	–	–	–	1	–	–	–	1	–
Springfield,	88,926	7	3	1	–	–	2	–	1	–	–
Lawrence,	85,892	3[3]	1	–	–	–	–	–	–	–	–
Somerville,	77,236	–	–	–	–	–	–	–	–	–	–
Holyoke,	57,730	–	–	–	–	–	–	–	–	–	–
Brockton,	56,878	2	1	–	1	–	–	–	–	–	–
Malden,	44,404	1	–	–	–	–	–	–	–	1	–
Haverhill,	44,115	–	–	–	–	–	–	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	2	–	–	–	1	–	1	–	–	–
Fitchburg,	37,826	1	–	–	–	1	–	–	–	–	–
Taunton,	34,259	1	–	–	–	–	–	1	–	–	–
Everett,	33,484	–	–	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	1	1	–	–	–	–	–	–	–	–
Pittsfield,	32,121	–	–	–	–	–	–	–	–	–	–
Waltham,	27,834	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	–	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	1	1	–	–	–	–	–	–	–	–
Northampton,	19,431	3	3	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	3	3	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	1	–	–	–	–	1	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	1	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	1	–	–	–	1	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,765,204	75	36	3	5	9	6	3	1	8	2

[1] Nonresidents deducted. [2] Total deaths.

[3] One death from anterior poliomyelitis; one death from ophthalmia neonatorum.

Week ending Oct. 11, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	{ 26[3] 28[4]	11[1] 11[2]	2[1] 2[2]	2[1] 3[2]	2[1] 2[2]	3[1] 3[2]	1[1] 1[2]	– –	3[1] 4[2]	– –
Worcester,	145,986	–	–	–	–	–	–	–	–	–	–
Fall River,	119,295	4	2	–	2	–	–	–	–	–	–
Lowell,	106,294	3[5]	1	–	–	–	–	–	1	–	–
Cambridge,	104,839	6	4	–	–	1	1	–	–	–	–
New Bedford,	96,652	1	1	–	–	–	–	–	–	–	–
Lynn,	89,336	3	3	–	–	–	–	–	–	–	–
Springfield,	88,926	1	1	–	–	–	–	–	–	–	–
Lawrence,	85,892	4	1	–	–	1	1	–	–	–	1
Somerville,	77,236	2	2	–	–	–	–	–	–	–	–
Holyoke,	57,730	2	1	1	–	–	–	–	–	–	–
Brockton,	56,878	1	–	–	–	–	1	–	–	–	–
Malden,	44,404	1	–	–	1	–	–	–	–	–	–
Haverhill,	44,115	2	1	–	1	–	–	–	–	–	–
Salem,	43,697	1	1	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	–	–	–	–	–	–	–	–	–	–
Taunton,	34,259	–	–	–	–	–	–	–	–	–	–
Everett,	33,484	–	–	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	–	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	2	–	–	–	1	–	1	–	–	–
Waltham,	27,834	2	1	1	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	–	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	3[5]	–	1	–	–	1	–	–	–	–
North Adams,	22,019	1	–	–	–	–	1	–	–	–	–
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	1	1	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	1	1	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	1	–	–	–	1	–	–	–	–	–
Clinton,	13,075	1	1	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	1	–	–	–	1	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	1	–	–	–	–	–	–	–	1	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,892,854	73	33	5	7	7	8	2	1	5	1

[1] Nonresidents deducted.
[2] Total deaths.
[3] Nonresidents deducted: one death from anterior poliomyelitis; one death from tetanus.
[4] Total deaths: one death from anterior poliomyelitis; one death from tetanus.
[5] One death from anterior poliomyelitis.

Week ending Oct. 18, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	19[1]	13[1]	–	–	2[1]	3[1]	1[1]	–	–	–
		23[2]	14[2]	–	1[2]	3[2]	3[2]	1[2]	–	1[2]	–
Worcester,	145,986	–	–	–	–	–	–	–	–	–	–
Fall River,	119,295	2	1	–	–	–	–	1	–	–	–
Lowell,	106,294	2	2	–	–	–	–	–	–	–	–
Cambridge,	104,839	8[3]	2	1	2	1	1	–	–	–	–
New Bedford,	96,652	4	1	1	–	–	2	–	–	–	–
Lynn,	89,336	4	3	–	1	–	–	–	–	–	–
Springfield,	88,926	–	–	–	–	–	–	–	–	–	–
Lawrence,	85,892	3[4]	2	–	–	–	–	–	–	–	–
Somerville,	77,236	2	2	–	–	–	–	–	–	–	–
Holyoke,	57,730	4	3	–	–	1	–	–	–	–	–
Brockton,	56,878	–	–	–	–	–	–	–	–	–	–
Malden,	44,404	–	–	–	–	–	–	–	–	–	–
Haverhill,	44,115	1	1	–	–	–	–	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	–	–	–	–	–	–	–	–	–	–
Taunton,	34,259	2	–	–	–	–	–	2	–	–	–
Everett,	33,484	–	–	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	1	–	–	–	–	–	–	–	1	–
Pittsfield,	32,121	2	2	–	–	–	–	–	–	–	–
Waltham,	27,834	1[5]	–	–	–	–	–	–	–	–	–
Brookline,	27,792	1	1	–	–	–	–	–	–	–	–
Chicopee,	25,401	1	–	–	1	–	–	–	–	–	–
Gloucester,	24,398	1	1	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	1	–	–	–	–	1	–	–	–	–
Northampton,	19,431	1	1	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	2	2	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	–	–	–	–	–	–	–	–	–	–
Peabody,	15,721	1[3]	–	–	–	–	–	–	–	–	–
Melrose,	15,715	1	1	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	–	–	–	1	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	2	2	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	1	1	–	–	–	–	–	–	–	–
Framingham,	12,948	1	–	1	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	1	1	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	1[4]	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,839,754	75	43	3	5	6	7	4	–	2	

[1] Nonresidents deducted.
[2] Total deaths.
[3] One death from tetanus.
[4] One death from anterior poliomyelitis.
[5] One death from trichinosis.

Week ending Oct. 25, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	27[1] 32[2]	19[1] 22[2]	1[1] 1[2]	2[1] 3[2]	–	3[1] 4[2]	1[1] 1[2]	–	1[1] 1[2]	–
Worcester,	145,986	–	–	–	–	–	–	–	–	–	–
Fall River,	119,295	5	3	–	–	1	1	–	–	–	–
Lowell,	106,294	4	3	–	–	–	1	–	–	–	–
Cambridge,	104,839	1	1	–	–	–	–	–	–	–	–
New Bedford,	96,652	8[3]	7	–	–	–	–	–	–	–	–
Lynn,	89,336	1	1	–	–	–	–	–	–	–	–
Springfield,	88,926	–	–	–	–	–	–	–	–	–	–
Lawrence,	85,892	3	3	–	–	–	–	–	–	–	–
Somerville,	77,236	4	2	–	–	1	1	–	–	–	–
Holyoke,	57,730	1	1	–	–	–	–	–	–	–	–
Brockton,	56,878	1	1	–	–	–	–	–	–	–	–
Malden,	44,404	2	1	–	–	–	–	–	–	–	1
Haverhill,	44,115	1	1	–	–	–	–	–	–	–	–
Salem,	43,697	1	–	–	–	–	1	–	–	–	–
Newton,	39,806	1	1	–	–	–	–	–	–	–	–
Fitchburg,	37,826	–	–	–	–	–	–	–	–	–	–
Taunton,	34,259	2	1	–	–	–	–	–	–	–	1
Everett,	33,484	2	2	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	–	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	–	–	–	–	–	–	–	–	–	–
Waltham,	27,834	1	1	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	–	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	2	–	–	–	1	1	–	–	–	–
Northampton,	19,431	1	1	–	–	–	–	–	–	–	–
Beverly,	18,650	2	–	–	1	–	1	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	3	3	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	1	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	1	1	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	1	–	–	–	–	–	–	–	–	1
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,863,471	81	57	1	4	3	10	1	–	1	3

[1] Nonresidents deducted. [2] Total deaths. [3] One death from tetanus.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Towns of Less than 10,000 Population.

[Under the provisions of chapter 210, Acts of 1913.]

DISEASE.	Place.	Week ending — Oct. 4.	Oct. 11.	Oct. 18.	Oct. 25.
Tuberculosis, pulmonary (or not classified).	Barnstable, .	–	1	–	–
	Bridgewater, .	–	1	–	–
	Franklin, . .	–	1	–	1
	Ipswich, . .	–	–	–	1
	Marshfield, .	–	–	–	1
	North Andover, .	1	–	–	–
	N. Attleborough, .	–	–	2	–
	Norwood, . .	–	–	1	–
	Rehoboth, . .	–	1	–	–
	Somerset, . .	–	–	1	–
	Stoneham, . .	–	1	–	–
	Swampscott, .	–	1	–	–
	Westborough, .	1	–	–	–
Total, . . .	. . . . .	2	6	4	3
Tuberculous meningitis,	Dighton, . .	1	–	–	–
Tuberculosis, other forms.	Danvers, . .	1	–	–	–
	Dudley, . .	–	–	1	–
	N. Attleborough, .	1	–	–	–
Total, . . .	. . . . .	2	–	1	–
Diphtheria, . .	Uxbridge, . .	–	–	1	1
Typhoid fever, . .	Freetown, . .	–	–	1	–
	Middleton, . .	1	–	–	–
Total, . . .	. . . . .	1	–	1	–
Scarlet fever, . .	Rockland, . .	1	–	–	–
Whooping cough, .	Winchester, .	1	–	–	–
Anterior poliomyelitis, .	Groton, . .	1	–	–	–

REPORT ON INSPECTION OF FOOD AND DRUGS.

Laboratory Examinations of Food and Drugs.

The following summary presents the results of the laboratory examinations during the month of October, 1913, of samples of food and drugs collected by inspectors of the Board: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Butter,	2	1	3
Canned fruits and vegetables,	2	–	2
Cider,	2	4	6
Coffee,	1	–	1
Condensed milk,	2	–	2
Confectionery,	7	–	7
Cream,	14	2	16
Cream of tartar,	2	–	2
Drugs,	166	27	193
Eggs,	11	–	11
Flavoring extracts: —			
Peppermint,	2	–	2
Vanilla,	5	1	6
Grape juice,	1	–	1
Ice cream,	28	–	28
Jams and jellies,	8	–	8
Lard,	1	1	2
Maple syrup,	–	2	2
Meat products: —			
Canned fish and meats,	7	1	8
Frogs' legs,	2	–	2
Head cheese,	1	–	1
Hamburg steak,	–	1	1
Sausages,	1	–	1
Milk,	549	104	653
Non-alcoholic drinks,	6	–	6
Olive oil,	8	–	8
Rice,	1	–	1
Salad dressing,	2	–	2
Shrimp,	9	3	12
Syrup,	2	–	2
Table sauce,	2	–	2
Vinegar,	1	–	1
Total,	845	147	992

The samples of drugs found to be adulterated were alcohol, spirit of nitrous ether, spirit of camphor, spirit of peppermint, tincture of ferric chloride, tincture of iodine, tincture of vanilla and mercury ointment.

The cities and towns in which samples were collected were: Arlington, Beverly, Boston, Brockton, Brookfield, Brookline, Burlington, Cambridge, Chelsea, Chicopee, Clinton, Dalton, Danvers, Dedham,

Easthampton, Everett, Fitchburg, Framingham, Franklin, Gloucester, Greenfield, Hampden, Hingham, Holyoke, Lanesborough, Lenox, Lowell, Lynn, Malden, Melrose, Montague, Natick, Newton, Northampton, Norwell, Pittsfield, Quincy, Revere, Salem, Southbridge, Spencer, Springfield, Stoneham, West Springfield, Woburn, Worcester.

Prosecutions for Violations of the Law relating to Food and Drugs.

Twenty-two convictions were secured during the month of October, 1913, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Goldsmith Wall Company,	Boston,	Broken out eggs (decomposed).[1]
2	Samuel Highley,	Woburn,	Ice cream (fat, 4.7).
3	George Levingstone,	Chelsea,	Lard (compound, not marked).
4	George Wilson,	Cohasset,	Milk (total solids, 11.20).[1,2]
5	Harris Rotman,	Millis,	Milk (total solids, 11.98).[3]
6	August Boucher,	Franklin,	Milk (total solids, 10.76).[2]
7	George W. Burgess,	Hingham,	Milk (total solids, 10.88).[2]
8	George W. Burgess,	Hingham,	Milk (total solids, 10.94).[2]
9	John Rynn,	Wayland,	Milk (total solids, 11.56).[1,3]
10	Charles H. Brown,	Revere,	Milk (total solids, 11.50).[3]
11	Albert Deinlein,	Richmond,	Milk (total solids, 11.06).[2]
12	James Foley,	Pittsfield,	Milk (total solids, 11.52).[2]
13	Nicholas Kirchner,	Pittsfield,	Milk (total solids, 12.06).[2]
14	S. Dallava & Company,	Pittsfield,	Milk (total solids, 11.48).[2]
15	Fred O. Farrington,	Dedham,	Milk (total solids, 10.26).[1,2]
16	George C. Nugent,	Rockport,	Milk (total solids, 11.76).[1,2]
17	G. Fred Wilde, Jr.,	Harvard,	Milk (total solids, 9.94).[1,2]
18	J. King Rogers,	Gloucester,	Milk (total solids, 9.66).[1,2]
19	Warren H. Root,	Bernardston,	Milk (total solids, 10.40).[1,2]
20	Ernest W. Burks,	Natick,	Milk (skimmed; cans not marked).
21	George Levingstone,	Chelsea,	Oleomargarine (not marked).
22	Vincent Tranfaglia,	Revere,	Spirit of peppermint (not U.S.P.).

[1] Appealed. [2] Watered. [3] Skimmed.

Fines imposed, $925.

LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR OCTOBER, 1913.

The following shows the adulterated or improperly labeled foods during the month of October, 1913: —

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
22530	Tincture of iodine,	H. J. Sorel, Easthampton, Mass.,	56 per cent. of U. S. P. strength.
q 12256	Spirit of peppermint,	The Owl Drug Store, V. Tranfaglia, Revere, Mass.,	64 per cent. of U. S. P. strength.
4622–R	Spirit of nitrous ether,	The Middlesex Drug Company, Elbert R. Boyd, Stoneham, Mass.	60 per cent. of U. S. P. strength.
22296	Colman's Pure Extract of Vanilla.	Colman Specialty Company, Boston, Mass.,	A vanilla extract containing a solution of vanillin.
22552	Tincture of vanilla,	Charles J. Foley, Greenfield, Mass.,	A compound tincture of vanillin containing vanillin and coumarin.
4398–R	Square Deal Syrup,	Vermont Farmers Company, Springfield, Mass.,	25 per cent. maple syrup, 75 per cent. cane sugar syrup. Percentages not stated.
4400–R	Square Deal Syrup,	Vermont Farmers Company, Springfield, Mass.,	50 per cent. maple syrup, 50 per cent. cane sugar syrup. Percentages not stated.
4024–R	Milk,	Ernest W. Burks, Natick, Mass.,	Total solids, 9.66 per cent.; fat, 0.30 per cent.; skimmed, not marked.
4082–R	Milk,	Michael McDevitt, Woburn, Mass.,	Total solids, 11.80 per cent.; fat, 3.75 per cent.; contained added water.
4088–R			Total solids, 11.60 per cent.; fat, 3.60 per cent.; contained added water.
4090–R			Total solids, 10.10 per cent.; fat, 2.80 per cent.; contained added water.
4092–R			Total solids, 10.40 per cent.; fat, 3.35 per cent.; contained added water.
4094–R			Total solids, 10.70 per cent.; fat, 3.30 per cent.; contained added water.
22340	Milk,	Allen Bros., Montague, Mass.,	Total solids, 11.18 per cent.; fat, 4.00 per cent.; contained added water.
22342			Total solids, 11.56 per cent.; fat, 4.10 per cent.; contained added water.

List of Adulterated or Improperly Labeled Foods, etc., for October, 1913 — *Concluded.*

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
q 12300	Milk,	Edward Williams, Spencer, Mass.,	Total solids, 10.30 per cent.; fat, 3.05 per cent.; contained added water.
q 12301			Total solids, 10.74 per cent.; fat, 3.40 per cent.; contained added water.
4457–S	Milk,	Simon Weisberg, Malden, Mass.,	Total solids, 10.82 per cent.; fat, 2.00 per cent.; skimmed, not marked.
22517	Milk,	R. B. Archibald, Brookline, Mass.,	Total solids, 12.34 per cent.; fat, 2.90 per cent.; skimmed, not marked.
q 12386	Milk,	Walter E. Bartlett, Easthampton, Mass.,	Total solids, 9.54 per cent.; fat, 0.20 per cent.; skimmed, not marked.
q 12392	Milk,	John Leuwonis, Easthampton, Mass.,	Total solids, 9.74 per cent.; fat, 0.20 per cent.; skimmed, not marked.
q 12393			Total solids, 11.20 per cent.; fat, 3.30 per cent.; contained added water.
q 12427	Milk,	Herbert W. Mason, Springfield, Mass.,	Total solids, 13.04 per cent.; fat, 3.90 per cent.; contained formaldehyde.

QUARTERLY REPORT ON COLD STORAGE.

During the months of July, August and September, 1913, the licensed cold-storage or refrigerating warehouses in the State were examined by the inspectors of the State Board of Health and found to be in good sanitary condition. This inspection also included the examination of articles of food contained therein.

During the quarter, 29 renewals of licenses were granted cold-storage warehouses throughout the State.

The inspectors condemned, confiscated, and destroyed a number of articles at the warehouses on account of being decomposed, tainted, or otherwise unfit for food.

The following tables show the quantities of articles of food placed in cold storage during the three months preceding the first day of October, 1913; also the quantities of butter and eggs held on the first day of October, 1913: —

Articles placed in Cold Storage.

Articles.	Cases.	Dozens.	Packages.	Pounds.
Eggs, case,	104,695	3,140,850	–	–
Eggs, broken,	7	–	450	380,181
Butter,	–	–	261,879 [1]	13,518,855
Poultry,	1,280	$3\frac{1}{4}$	7,214	1,527,829
Game,	–	$35\frac{11}{12}$	457	5,387
Meat, fresh,	1,341 [2]	$-\frac{1}{2}$	9,694	3,066,986
Meat products, fresh (except in process of manufacture),	–	–	1,627	122,120
Fish, fresh food,	1	–	3,477 [3]	5,771,489
Totals,	107,324	$3,140,889\frac{2}{3}$	284,798	24,392,847

[1] Includes 36,085 tubs and 544 boxes. [2] Includes 1,021 boxes. [3] Reported as barrels.

Butter and Eggs held.

Articles.	Cases.	Dozens.	Packages.	Pounds.
Eggs, case,	503,334	15,100,019	–	–
Eggs, broken,	127	98	351	14,386
Butter,	–	–	103,076 [1]	19,383,098 [2]
Totals,	503,461	15,100,117	103,427	19,397,484

[1] Includes 74 tubs. [2] Includes 204 pounds of print butter.

Articles in Cold Storage condemned upon Physical and Chemical Examinations as Unfit for Food.

DATE.	ARTICLES.	Weight (Pounds).	Reasons.	Dispositions.
Aug. 5, 1913	Lamb, ...	96	Decomposed	Incinerated
Aug. 6, 1913	Fowl, ...	18	Decomposed	Incinerated
Aug. 6, 1913	Eggs, ...	300	Decomposed	Incinerated
Aug. 10, 1913	Turkeys, ...	37¾	Decomposed	Incinerated
Sept. 5, 1913	Pigeons, ...	10	Decomposed	Incinerated
Sept. 6, 1913	Venison, ...	49	Decomposed	Incinerated
Sept. 10, 1913	Lamb, ...	79	Decomposed	Incinerated
Sept. 11, 1913	Eggs, ...	2,370	Decomposed	Rendered
Sept. 12, 1913	Eggs, ...	64	Decomposed	Buried
Sept. 13, 1913	Squabs, ...	100	Decomposed	Incinerated
Sept. 13, 1913	Moose, ...	93	Decomposed	Incinerated
Sept. 13, 1913	Coons, ...	22	Decomposed	Incinerated
Sept. 15, 1913	Geese, ...	939	Decomposed	Rendered
Sept. 18, 1913	Venison, ...	115	Decomposed	Incinerated
Sept. 23, 1913	Mackerel, ...	600	Decomposed	Rendered
Sept. 24, 1913	Eggs, ...	1,560	Decomposed	Buried at sea
Sept. 25, 1913	Mackerel, ...	1,125	Decomposed	Rendered
Sept. 25, 1913	Halibut, ...	95	Decomposed	Rendered
Sept. 25, 1913	Salmon, ...	150	Decomposed	Rendered
Sept. 26, 1913	Eggs, ...	1,384	Decomposed	Buried at sea
Sept. 26, 1913	Livers, ...	226	Decomposed	Buried at sea
Sept. 26, 1913	Plover, ...	30	Decomposed	Incinerated
Sept. 26, 1913	Squabs, ...	30	Decomposed	Incinerated
Sept. 26, 1913	Broilers, ...	250	Decomposed	Incinerated
Sept. 26, 1913	Broilers, ...	92	Decomposed	Buried at sea
Sept. 26, 1913	Ducks, ...	84	Decomposed	Incinerated
Oct. 1, 1913	Venison, ...	9	Decomposed	Rendered
Oct. 1, 1913	Plux, ...	1,500	Decomposed	Rendered
Oct. 1, 1913	Lamb, ...	51	Decomposed	Rendered
Oct. 1, 1913	Livers, ...	300	Decomposed	Rendered
Oct. 3, 1913	Partridges, ...	8	Decomposed	Incinerated
Oct. 3, 1913	Chickens, ...	158	Decomposed	Incinerated
Oct. 3, 1913	Turkeys, ...	80	Decomposed	Incinerated
Oct. 6, 1913	Eggs, ...	1,662	Decomposed	Rendered
Oct. 7, 1913	Turkeys, ...	18	Soiled	Incinerated
Oct. 9, 1913	Fowl, ...	150	Decomposed	Rendered
Oct. 14, 1913	Chickens, ...	839	Decomposed	Rendered
Oct. 14, 1913	Chickens, ...	156	Soiled	Rendered
Oct. 16, 1913	Ducks, ...	411	Decomposed	Rendered
Oct. 16, 1913	Venison, ...	238	Decomposed	Rendered
Oct. 16, 1913	Turkeys, ...	843	Decomposed	Rendered
Oct. 16, 1913	Coons, ...	15	Decomposed	Rendered
Oct. 16, 1913	Chickens, ...	344	Decomposed	Rendered
Oct. 16, 1913	Beef loins, ...	157	Decomposed	Rendered
Oct. 16, 1913	Quail, ...	118	Decomposed	Rendered
Oct. 16, 1913	Miscellaneous birds, .	40	Decomposed	Rendered
Oct. 16, 1913	Ducklings, ...	86	Decomposed	Rendered
Oct. 16, 1913	Guinea chickens, . .	110	Decomposed	Rendered
Oct. 16, 1913	Moose, ...	89	Decomposed	Rendered
Oct. 16, 1913	Grouse, ...	46	Decomposed	Rendered
Oct. 16, 1913	Goose, ...	20	Decomposed	Rendered
Oct. 16, 1913	Pork tenderloins, . .	40	Decomposed	Rendered
Oct. 16, 1913	Pork, ...	73	Decomposed	Rendered
Oct. 16, 1913	Pigeons, ...	40	Decomposed	Rendered
Oct. 16, 1913	Squabs, ...	66	Decomposed	Rendered
Oct. 16, 1913	Lamb fries, ...	201	Decomposed	Rendered
Oct. 16, 1913	Lamb fores, ...	90	Decomposed	Rendered
Oct. 16, 1913	Lamb chops, ...	70	Decomposed	Rendered
Oct. 16, 1913	Broilers, ...	306	Decomposed	Rendered
Oct. 16, 1913	Frogs' legs, ...	50	Decomposed	Rendered
Oct. 16, 1913	Plover, ...	48	Decomposed	Rendered

Articles in Cold Storage condemned upon Physical and Chemical Examinations as Unfit for Food — Concluded.

DATE.	ARTICLES.	Weight (Pounds).	Reasons.	Dispositions.
Oct. 16, 1913	Fowl,	332	Decomposed	Rendered
Oct. 16, 1913	Sweetbreads,	187	Decomposed	Rendered
Oct. 16, 1913	Beef rounds,	61	Decomposed	Rendered
Oct. 16, 1913	Grass birds,	30	Decomposed	Rendered
Oct. 16, 1913	Oxtails,	82	Decomposed	Rendered
Oct. 16, 1913	Livers,	50	Tainted	Rendered
Oct. 16, 1913	Scallops,	28	Tainted	Rendered
Oct. 16, 1913	Livers,	80	Sour	Rendered
Oct. 16, 1913	Pork tenderloins,	42	Soiled	Rendered
Oct. 16, 1913	Pork loins,	46	Soiled	Rendered
Oct. 16, 1913	Ducks,	49	Soiled	Rendered
Oct. 16, 1913	Bear meat,	50	Soiled	Rendered
Oct. 16, 1913	Lobster meat,	40	Soiled	Rendered
Oct. 16, 1913	Chickens,	432	Soiled	Rendered
Oct. 16, 1913	Livers,	40	Soiled	Rendered
Oct. 16, 1913	Broilers,	488	Soiled	Rendered
Oct. 16, 1913	Fowl,	213	Soiled	Rendered
Oct. 16, 1913	Crab meat,	18	Soiled	Rendered
Oct. 16, 1913	Pigeons,	18	Soiled	Rendered
Oct. 16, 1913	Guinea hens,	70	Soiled	Rendered
Oct. 17, 1913	Squabs,	80	Decomposed	Rendered
Oct. 17, 1913	Turkeys,	127	Decomposed	Rendered
Oct. 17, 1913	Ducks,	108	Decomposed	Rendered
Oct. 17, 1913	Fowl,	82	Decomposed	Rendered
	Total,	21,103¾		

Chemical Examinations of Samples of Cold-storage Goods.

ARTICLES.	Number found to be of Good Quality.	Number found to be Unfit for Food.	Total Number of Samples examined.
Liver,	1	–	1
Pollock,	–	1	1
Eggs,	1	13	14
Squabs,	1	1	2
Goose,	–	1	1
Duck,	–	1	1
Broilers,	1	2	3
Plover,	–	2	2
Totals,	4	21	25

During the quarter the following conviction was secured because of the removal of goods that had been in cold storage longer than twelve months without the permission of the State Board of Health: —

Name of Defendant.	Place.	Result.
Nathan Robbins Company,	Boston,	Case filed.

Thirty-five convictions as follows were also secured because the eggs, "offered or exposed for sale," were not marked with the words "Cold Storage Eggs" in accordance with the rules and regulations of the State Board of Health: —

Name of Defendant.	Place.	Result.
Mason Egg and Butter Company,	Pittsfield,	Fined $10.
Mohican Company,	Pittsfield,	Fined $10.
New York Cash Grocery Company,	Pittsfield,	Fined $10.
Albany Cash Market,	Pittsfield,	Fined $10.
Thomas Tillman,	Pittsfield,	Fined $10.
Isidor Tillman,	Pittsfield,	Fined $10.
James Van Dyke Company,	Pittsfield,	Fined $10.
Walter J. Munger,	Pittsfield,	Fined $10.
George C. Hodges,	Springfield,	Fined $10.
Julius T. Carman,	Springfield,	Fined $10.
C. L. Thrasher,	Springfield,	Fined $10.
John Moskal,	Holyoke,	Fined $10.
Michael Smith,	Holyoke,	Fined $10.
New York Butter House,	Holyoke,	Fined $10.
Josiah R. Smith,	Holyoke,	Fined $10.
Sarkis Zarkanian,	Worcester,	Fined $10.
William E. Meggett,	Worcester,	Fined $3.
J. Ashman Mansfield,	Worcester,	Fined $10.
Nicholas Berlo,	South Boston,	Fined $10.
Mae D. Gregory,	Malden,	Case filed.
Edward W. Hugson,	Malden,	Case filed.
Bell Rock Market Company,	Malden,	Case filed.
W. H. Pembrook,	Malden,	Case filed.
D. H. Feltrup Company,	Malden,	Case filed.
W. H. Donn,	Malden,	Case filed.
Adam S. Amrhein,	South Boston,	Case filed.
Abraham Cohen,	South Boston,	Case filed.
Jacob Cohen,	South Boston,	Case filed.
David Cooper,	South Boston,	Case filed.
James Dalzell,	South Boston,	Case filed.
Toni Mucci,	South Boston,	Case filed.
Joseph S. Schuver,	South Boston,	Case filed.
William Scott,	South Boston,	Case filed.
Leonard H. Stevenson,	South Boston,	Case filed.
Stanley Welaish,	South Boston,	Case filed.

Total amount of fines imposed, $183.

QUARTERLY REPORT ON THE BUSINESS OF SLAUGHTERING AND MEAT INSPECTION.

The quarterly report upon the work of slaughtering and meat inspection from July 1, 1913, to Sept. 30, 1913, inclusive, has been rendered to the State Board of Health by the inspectors of slaughtering in the various cities and towns throughout the Commonwealth. The result of these inspections may be found in the following tables showing the number and kinds of carcasses inspected, the condemnations of carcasses found unfit for food, the reasons for condemnation, and the disposition of such carcasses.

Where a blank space appears it indicates the absence of a report having been rendered by the inspector of slaughtering for such city or town, or that an inspector of slaughtering has not been nominated by the local board of health, or has not been approved by the State Board of Health.

Quarterly Report on Slaughtering Inspection, July 1–Sept. 30, 1913.

Cities and Towns.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Abington,	–	11	2	–	– –	– –	– –
Acton,	71	190	5	–	5 cattle, 11 calves.	5 tuberculosis, 11 immature.	5 rendered, 11 fed to hogs.
Acushnet,	–	71	8	–	– –	– –	– –
Adams,	18	85	–	–	– –	– –	– –
Agawam,	–	–	–	–	– –	– –	– –
Alford,	–	2	–	12	– –	– –	– –
Amesbury,	1	34	3	6	– –	– –	– –
Amherst,	57	135	2	–	4 cattle, 7 calves.	4 tuberculosis, 7 immature.	11 buried.

Quarterly Report on Slaughtering Inspection, July 1–Sept. 30, 1913 — *Continued.*

Cities and Towns.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Andover,	–	6	52	–	2 hogs.	2 tuberculosis.	2 rendered.
Arlington,	–	–	–	–	– –	– –	– –
Ashburnham,	–	24	–	–	– –	– –	– –
Ashby,	–	–	–	–	– –	– –	– –
Ashfield,	34	10	12	50	– –	– –	– –
Ashland,	10	29	15	–	– –	– –	– –
Athol,	5	15	49	41	– –	– –	– –
Attleborough,	35	58	–	–	1 cow.	1 tuberculosis.	1 buried.
Auburn,	6	10	14	–	– –	– –	– –
Avon,	–	–	–	–	– –	– –	– –
Ayer,	–	–	–	–	– –	– –	– –
Barnstable,	–	25	3	–	– –	– –	– –
Barre,	2	5	7	3	– –	– –	– –
Becket,	–	–	–	–	– –	– –	– –
Bedford,	–	–	–	–	– –	– –	– –
Belchertown,	6	140	13	7	– –	– –	– –
Bellingham,	1	–	6	–	1 bull.	1 bruised.	1 buried.
Belmont,	–	–	–	–	– –	– –	– –
Berkley,	–	–	–	–	– –	– –	– –
Berlin,	–	–	–	–	– –	– –	– –
Bernardston,	–	–	–	–	– –	– –	– –
Beverly,	–	–	–	–	– –	– –	– –
Billerica,	20	46	2	–	1 cow, 3 calves.	1 tuberculosis, 3 immature.	4 rendered.
Blackstone,	–	–	–	–	– –	– –	– –
Blandford,	3	34	4	12	– –	– –	– –
Bolton,	–	–	–	–	– –	– –	– –
Bourne,	–	8	–	–	– –	– –	– –
Boxborough,	–	–	–	–	– –	– –	– –
Boxford,	1	8	4	–	– –	– –	– –
Boylston,	7	49	10	–	– –	– –	– –
Braintree,	1	59	–	–	2 cattle.	2 tuberculosis.	2 rendered.
Brewster,	14	–	–	–	– –	– –	– –

Bridgewater,	–	–	–	–	–	–	–
Brimfield,	–	16	1	–	–	–	–
BROCKTON,	1	4	–	–	2 calves.	2 tuberculosis.	2 rendered.
Brookfield,	–	12	–	2	–	–	–
Brookline,	–	–	–	–	–	–	–
Buckland,	–	–	–	–	–	–	–
Burlington,	–	–	–	–	–	–	–
CAMBRIDGE,	–	2,174	–	71	108 calves, 2 sheep.	7 omphalitis, 11 dysentery, 84 immature, 8 weak condition.	110 rendered.
Canton,	–	–	–	–	–	–	–
Carlisle,	20	47	3	–	–	–	–
Carver,	–	7	–	–	–	–	–
Charlemont,	17	5	2	21	–	–	–
Charlton,	63	139	10	14	1 cow, 4 hogs.	1 tuberculosis, 4 hog cholera.	5 buried.
Chatham,	–	–	–	–	–	–	–
Chelmsford,	149	214	43	53	9½ cattle, 2 calves.	9 tuberculosis, ½ bruised, 2 immature.	11½ rendered.
CHELSEA,	–	–	–	–	–	–	–
Cheshire,	3	2	2	–	–	–	–
Chester,	–	–	–	–	–	–	–
Chesterfield,	1	18	3	–	–	–	–
CHICOPEE,	–	2	–	–	–	–	–
Chilmark,	–	–	–	70	–	–	–
Clarksburg,	–	–	–	–	–	–	–
Clinton,	6	67	30	–	1 calf.	1 immature.	1 rendered.
Cohasset,	–	1	–	–	–	–	–
Colrain,	25	4	21	3	–	–	–
Concord,	523	162	–	–	43 cattle, 17 calves.	43 tuberculosis, 2 improperly prepared, 15 immature.	60 rendered.
Conway,	–	–	–	–	–	–	–
Cummington,	14	18	6	75	–	–	–
Dalton,	–	–	–	–	–	–	–
Dana,	2	–	1	3	–	–	–
Danvers,	–	109	–	–	–	–	–
Dartmouth,	1	152	14	–	1 cow.	1 tuberculosis.	1 rendered.

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, JULY 1–SEPT. 30, 1913 — *Continued.*

Cities and Towns.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Dedham,	1	66	–	2	1 cow, 1 calf.	1 pneumonia, 1 immature.	2 rendered.
Deerfield,	8	9	24	11	1 cow.	1 septicæmia.	1 buried.
Dennis,	2	6	1	4	–	–	–
Dighton,	33	112	–	2	–	–	–
Douglas,	–	–	–	–	–	–	–
Dover,	–	–	–	–	–	–	–
Dracut,	338	243	115	–	7 cattle, 9 calves, 4 hogs.	8 tuberculosis, 5 diarrhœa, 4 immature, 3 icterus.	19 rendered, 1 buried.
Dudley,	8	76	19	–	–	–	–
Dunstable,	–	–	–	–	–	–	–
Duxbury,	–	3	2	3	–	–	–
East Bridgewater,	–	–	–	–	–	–	–
East Longmeadow,	1	1	3	–	–	–	–
Eastham,	–	9	–	–	–	–	–
Easthampton,	1	192	–	–	–	–	–
Easton,	12	69	–	1	–	–	–
Edgartown,	–	16	5	46	–	–	–
Egremont,	28	19	–	103	–	–	–
Enfield,	1	171	8	–	–	–	–
Erving,	–	–	–	–	–	–	–
Essex,	–	–	–	–	–	–	–
EVERETT,	–	–	–	–	–	–	–
Fairhaven,	217	235	–	22	5 cattle, 13 calves, 1 sheep.	4 tuberculosis, 1 hydræmia, 13 immature, 1 caseous lymphadenitis.	19 rendered.
FALL RIVER,	–	–	2	–	–	–	–
Falmouth,	–	–	–	–	–	–	–
FITCHBURG,	173	244	29	–	7 cattle.	7 tuberculosis.	7 rendered.
Florida,	–	–	–	–	–	–	–
Foxborough,	–	4	–	–	–	–	–
Framingham,	49	125	–	–	2 cattle, 5 calves.	2 tuberculosis, 1 nephritis, 4 immature.	7 rendered.

Franklin,	1	24	44	2	1 cow, 6 hogs.	7 tuberculosis.	7 buried.
Freetown,	2	9	1	–	– –	– –	– –
Gardner,	–	–	–	–	– –	– –	– –
Gay Head,	–	–	–	–	– –	– –	– –
Georgetown,	–	–	–	–	– –	– –	– –
Gill,	6	15	3	8	– –	– –	– –
GLOUCESTER,	7	40	–	–	2 cattle, 8 calves.	2 tuberculosis, 8 immature.	10 rendered.
Goshen,	–	–	–	–	– –	– –	– –
Gosnold,	3	–	–	22	3 cattle.	3 tuberculosis.	3 buried.
Grafton,	–	–	–	–	– –	– –	– –
Granby,	107	160	16	–	5 cattle, 1 calf.	1 tuberculosis, 1 emaciated, 1 bruised, 1 old age, 1 difficult parturition, 1 anæmia.	4 rendered, 2 buried.
Granville,	–	22	1	3	– –	– –	– –
Great Barrington,	–	36	–	86	– –	– –	– –
Greenfield,	16	55	24	142	2 calves, 1 hog.	2 immature, 1 trichinosis.	2 rendered, 1 buried.
Greenwich,	1	18	–	7	– –	– –	– –
Groton,	15	13	2	–	– –	– –	– –
Groveland,	–	2	–	–	– –	– –	– –
Hadley,	–	–	–	–	– –	– –	– –
Halifax,	–	–	–	–	– –	– –	– –
Hamilton,	–	–	–	–	– –	– –	– –
Hampden,	–	66	5	–	– –	– –	– –
Hancock,	–	11	1	65	– –	– –	– –
Hanover,	–	15	10	10	– –	– –	– –
Hanson,	–	–	4	–	– –	– –	– –
Hardwick,	–	–	4	–	– –	– –	– –
Harvard,	1	118	2	–	2 calves.	2 immature.	2 rendered.
Harwich,	–	–	–	–	– –	– –	– –
Hatfield,	6	96	–	–	1 bull.	1 tuberculosis.	1 rendered.
HAVERHILL,	–	–	–	–	– –	– –	– –
Hawley,	13	1	–	–	– –	– –	– –
Heath,	4	–	2	–	– –	– –	– –
Hingham,	1	1	–	–	– –	– –	– –
Hinsdale,	–	–	–	–	– –	– –	– –

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, JULY 1–SEPT. 30, 1913 — *Continued.*

CITIES AND TOWNS.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Holbrook,	–	–	–	–	– –	– –	– –
Holden,	–	–	–	–	– –	– –	– –
Holland,	–	–	–	–	– –	– –	– –
Holliston,	–	–	–	–	– –	– –	– –
HOLYOKE,	3	1	1	–	– –	– –	– –
Hopedale,	–	–	–	–	– –	– –	– –
Hopkinton,	1	6	–	–	– –	– –	– –
Hubbardston,	3	28	6	6	– –	– –	– –
Hudson,	–	8	5	–	– –	– –	– –
Hull,	–	–	–	–	– –	– –	– –
Huntington,	18	12	–	46	– –	– –	– –
Ipswich,	1	1	2	–	1 cow, 1 hog.	1 tuberculosis, 1 hog cholera.	1 rendered, 1 buried.
Kingston,	–	–	–	–	– –	– –	– –
Lakeville,	–	2	–	–	– –	– –	– –
Lancaster,	–	–	–	–	– –	– –	– –
Lanesborough,	–	–	–	–	– –	– –	– –
LAWRENCE,	33	15	88	–	2 cattle.	1 tuberculosis, 1 blood poison.	2 rendered.
Lee,	4	–	–	–	– –	– –	– –
Leicester,	9	99	3	–	1 cow.	1 tuberculosis.	1 rendered.
Lenox,	59	1	31	50	– –	– –	– –
Leominster,	30	140	43	–	2 cattle, 4 calves, 1 hog.	3 tuberculosis, 4 immature.	7 rendered.
Leverett,	–	–	–	–	– –	– –	– –
Lexington,	39	1,154	202	47	12 calves.	12 bruised.	12 buried.
Leyden,	–	6	5	5	– –	– –	– –
Lincoln,	–	–	–	–	– –	– –	– –
Littleton,	–	–	–	–	– –	– –	– –
Longmeadow,	–	–	–	–	– –	– –	– –
LOWELL,	–	1	19	–	1 hog.	1 tuberculosis.	1 rendered.

Ludlow,	–	143	11	7	–	–	–
Lunenburg,	24	186	35	5	2 cattle, 1 calf.	2 tuberculosis, 1 strangulation.	3 rendered.
Lynn,	139	129	14	1	5 calves.	5 immature.	5 rendered.
Lynnfield,	90	91	9	–	3 cattle, 6 calves.	3 tuberculosis, 6 immature.	9 rendered.
Malden,	–	–	–	–	–	–	–
Manchester,	–	–	–	–	–	–	–
Mansfield,	5	14	8	–	–	–	–
Marblehead,	–	–	–	–	–	–	–
Marion,	–	–	–	–	–	–	–
Marlborough,	2	21	20	–	–	–	–
Marshfield,	1	–	–	–	1 cow.	1 suffocation.	1 buried.
Mashpee,	–	–	–	–	–	–	–
Mattapoisett,	–	9	14	2	1 hog.	1 pneumonia.	1 buried.
Maynard,	7	127	25	–	–	–	–
Medfield,	–	3	–	2	–	–	–
Medford,	–	–	–	–	–	–	–
Medway,	45	198	6	–	1 calf, 1 hog.	1 immature, 1 paralysis.	1 rendered, 1 buried.
Melrose,	–	–	–	–	–	–	–
Mendon,	–	–	–	–	–	–	–
Merrimac,	–	–	–	–	–	–	–
Methuen,	–	–	–	–	–	–	–
Middleborough,	42	47	4	–	1 hog.	1 bronchitis.	1 buried.
Middlefield,	–	–	–	–	–	–	–
Middleton,	–	–	–	–	–	–	–
Milford,	89	113	59	8	3 cattle, 8 calves.	3 tuberculosis, 8 immature.	3 rendered, 8 buried.
Millbury,	–	–	–	–	–	–	–
Millis,	29	30	–	–	1 cow.	1 tuberculosis.	1 buried.
Milton,	–	–	–	16	–	–	–
Monroe,	–	–	–	–	–	–	–
Monson,	–	–	–	–	–	–	–
Montague,	1	19	8	3	–	–	–
Monterey,	–	–	–	–	–	–	–
Montgomery,	–	–	–	–	–	–	–
Mount Washington,	–	–	–	–	–	–	–

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, JULY 1–SEPT. 30, 1913 — *Continued.*

CITIES AND TOWNS.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Nahant,	–	–	–	–	– –	– –	– –
Nantucket,	–	46	–	–	– –	– –	– –
Natick,	–	–	–	–	– –	– –	– –
Needham,	–	–	–	–	– –	– –	– –
New Ashford,	–	–	–	–	– –	– –	– –
NEW BEDFORD,	87	134	32	3	2 cattle, 2 calves.	2 tuberculosis, 2 immature.	4 rendered.
New Braintree,	15	54	–	–	– –	– –	– –
New Marlborough,	5	9	2	16	– –	– –	– –
New Salem,	3	28	2	–	– –	– –	– –
Newbury,	–	–	–	–	– –	– –	– –
NEWBURYPORT,	87	149	59	13	1 calf.	1 immature.	1 rendered.
NEWTON,	–	–	–	–	– –	– –	– –
Norfolk,	1	–	–	–	– –	– –	– –
NORTH ADAMS,	183	75	31	11	2 cattle.	2 tuberculosis.	2 rendered.
North Andover,	–	–	4	–	– –	– –	– –
North Attleborough,	25	58	11	–	– –	– –	– –
North Brookfield,	–	13	8	–	– –	– –	– –
North Reading,	–	–	2	–	– –	– –	– –
NORTHAMPTON,	32	91	8	4	2 cattle.	2 tuberculosis.	2 rendered.
Northborough,	–	3	1	–	– –	– –	– –
Northbridge,	–	2	10	–	– –	– –	– –
Northfield,	–	2	–	2	– –	– –	– –
Norton,	–	4	1	–	– –	– –	– –
Norwell,	–	–	–	–	– –	– –	– –
Norwood,	2	78	38	14	– –	– –	– –
Oak Bluffs,	–	–	–	–	– –	– –	– –
Oakham,	1	38	1	–	– –	– –	– –
Orange,	21	59	22	5	6 cattle.	6 tuberculosis.	1 rendered, 5 buried.
Orleans,	1	8	3	–	– –	– –	– –
Otis,	8	15	15	–	1 cow.	1 tuberculosis.	1 buried.
Oxford,	12	5	7	–	– –	– –	– –

Palmer,	72	68	21	–	2 cattle, 1 calf, 1 hog.	3 tuberculosis, 1 immature.	2 rendered, 1 buried, 1 owner took back.
Paxton,	5	11	–	–	– –	– –	– –
Peabody,	–	–	–	–	– –	– –	– –
Pelham,	–	1	–	–	– –	– –	– –
Pembroke,	–	17	4	2	– –	– –	– –
Pepperell,	5	70	–	–	1 cow, 2 calves.	1 tuberculosis, 2 immature.	3 buried.
Peru,	–	–	–	–	– –	– –	– –
Petersham,	–	12	10	46	– –	– –	– –
Phillipston,	4	11	4	–	– –	– –	– –
PITTSFIELD,	–	–	–	–	– –	– –	– –
Plainfield,	1	13	6	–	– –	– –	– –
Plainville,	–	–	–	–	– –	– –	– –
Plymouth,	28	15	11	2	2 cattle, 1 calf.	1 tuberculosis, 1 septic poison, 1 immature.	3 rendered.
Plympton,	–	–	–	–	– –	– –	– –
Prescott,	–	–	–	–	– –	– –	– –
Princeton,	2	54	33	2	– –	– –	– –
Provincetown,	–	1	3	–	1 hog.	1 paralysis.	1 buried.
QUINCY,	–	–	1	–	1 hog.	1 suffocation.	1 rendered.
Randolph,	–	–	1	–	– –	– –	– –
Raynham,	2	24	1	5	– –	– –	– –
Reading,	117	22	14	–	2 cattle.	2 tuberculosis.	2 rendered.
Rehoboth,	63	234	14	2	– –	– –	– –
Revere,	–	–	–	–	– –	– –	– –
Richmond,	–	–	–	–	– –	– –	– –
Rochester,	–	–	–	–	– –	– –	– –
Rockland,	–	–	–	–	– –	– –	– –
Rockport,	–	–	–	–	– –	– –	– –
Rowe,	–	–	–	–	– –	– –	– –
Rowley,	11	88	8	–	– –	– –	– –
Royalston,	–	–	–	–	– –	– –	– –
Russell,	–	–	–	–	– –	– –	– –
Rutland,	19	86	20	–	– –	– –	– –
SALEM,	–	–	–	–	– –	– –	– –
Salisbury,	–	–	–	–	– –	– –	– –

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, JULY 1–SEPT. 30, 1913 — *Continued.*

Cities and Towns.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Sandisfield,	22	49	–	22	– –	– –	– –
Sandwich,	–	–	1	–	– –	– –	– –
Saugus,	–	–	–	–	– –	– –	– –
Savoy,	–	–	–	–	– –	– –	– –
Scituate,	–	2	–	–	– –	– –	– –
Seekonk,	–	–	–	–	– –	– –	– –
Sharon,	–	2	–	–	– –	– –	– –
Sheffield,	17	22	–	189	– –	– –	– –
Shelburne,	39	29	12	199	– –	– –	– –
Sherborn,	–	6	2	–	– –	– –	– –
Shirley,	–	–	–	–	– –	– –	– –
Shrewsbury,	2	230	55	6	– –	– –	– –
Shutesbury,	–	–	–	–	– –	– –	– –
Somerset,	3	–	28	–	– –	– –	– –
SOMERVILLE,	–	–	17	–	– –	– –	– –
South Hadley,	3	73	25	2	– –	– –	– –
Southampton,	15	35	1	–	1 cow.	1 tuberculosis.	1 rendered.
Southborough,	–	–	–	–	– –	– –	– –
Southbridge,	16	35	18	–	– –	– –	– –
Southwick,	–	42	–	23	– –	– –	– –
Spencer,	9	36	3	1	– –	– –	– –
SPRINGFIELD,	–	79	1	9	2 calves, 1 hog.	2 decomposed, 1 suffocation.	2 rendered, 1 buried.
Sterling,	–	–	–	–	– –	– –	– –
Stockbridge,	–	–	–	–	– –	– –	– –
Stoneham,	–	–	–	–	– –	– –	– –
Stoughton,	4	44	–	–	– –	– –	– –
Stow,	–	–	–	–	– –	– –	– –
Sturbridge,	140	254	24	–	12 calves.	12 immature.	12 buried.
Sudbury,	–	1	–	–	– –	– –	– –
Sunderland,	4	30	9	–	– –	– –	– –
Sutton,	–	69	10	–	– –	– –	– –
Swampscott,	–	–	–	–	– –	– –	– –
Swansea,	94	108	8	–	– –	– –	– –

TAUNTON,	46	11	36	–	1 hog.	1 tuberculosis.	1 rendered.
Templeton,	2	16	7	–	– –	– –	– –
Tewksbury,	163	143	6	–	9 cattle, 1 calf, 1 hog.	10 tuberculosis, 1 immature.	10 rendered, 1 buried.
Tisbury,	–	–	–	–	– –	– –	– –
Tolland,	–	2	–	–	– –	– –	– –
Topsfield,	1	33	1	1,265	4 calves, 1 sheep.	4 immature, 1 injured.	5 rendered.
Townsend,	7	12	7	–	1 cow, 1 calf.	1 tuberculosis, 1 immature.	1 rendered, 1 buried.
Truro,	–	–	–	–	– –	– –	– –
Tyngsborough,	–	–	10	–	– –	– –	– –
Tyringham,	–	2	–	–	– –	– –	– –
Upton,	1	2	–	–	1 cow.	1 injured.	1 buried.
Uxbridge,	3	9	6	–	3 cattle, 1 hog.	4 tuberculosis.	3 rendered, 1 buried.
Wakefield,	–	–	16	–	– –	– –	– –
Wales,	–	–	–	–	– –	– –	– –
Walpole,	–	5	–	–	– –	– –	– –
WALTHAM,	–	–	–	–	– –	– –	– –
Ware,	–	–	–	–	– –	– –	– –
Wareham,	–	–	–	–	– –	– –	– –
Warren,	10	8	16	3	2 cattle.	2 injured.	2 buried.
Warwick,	2	2	2	–	– –	– –	– –
Washington,	3	32	2	7	– –	– –	– –
Watertown,	35	185	12	–	– –	– –	– –
Wayland,	–	–	–	–	– –	– –	– –
Webster,	–	–	–	–	– –	– –	– –
Wellesley,	–	–	–	–	– –	– –	– –
Wellfleet,	–	–	–	–	– –	– –	– –
Wendell,	–	11	–	20	– –	– –	– –
Wenham,	–	–	–	–	– –	– –	– –
West Boylston,	–	1	3	–	– –	– –	– –
West Bridgewater,	–	154	37	3	12 calves.	12 immature.	8 fed to hogs, 4 buried.
West Brookfield,	–	13	1	3	– –	– –	– –
West Newbury,	–	–	–	–	– –	– –	– –
West Springfield,	–	–	–	–	– –	– –	– –
West Stockbridge,	–	12	–	–	– –	– –	– –
West Tisbury,	–	2	–	309	– –	– –	– –
Westborough,	–	4	1	–	– –	– –	– –

QUARTERLY REPORT ON SLAUGHTERING INSPECTION, JULY 1–SEPT. 30, 1913 — *Concluded.*

CITIES AND TOWNS.	Number of Cattle.	Number of Calves.	Number of Hogs.	Number of Sheep.	Number of Condemnations.	Reasons for Condemnation.	Disposition of Carcasses.
Westfield,	–	–	–	–	– –	– –	– –
Westford,	6	180	13	5	3 calves.	3 immature.	3 rendered.
Westhampton,	–	27	–	–	– –	– –	– –
Westminster,	–	7	1	–	– –	– –	– –
Weston,	3	104	3	2	1 cow, 11 calves.	1 abscess, 11 immature.	12 buried.
Westport,	105	167	30	12	3 cattle, 2 calves, 2 hogs.	5 tuberculosis, 2 immature.	5 rendered, 2 burned.
Westwood,	–	2	4	–	– –	– –	– –
Weymouth,	–	–	–	–	– –	– –	– –
Whately,	–	–	–	–	– –	– –	– –
Whitman,	–	–	–	–	– –	– –	– –
Wilbraham,	11	19	–	–	– –	– –	– –
Williamsburg,	–	–	–	–	– –	– –	– –
Williamstown,	25	183	10	534	3 cattle.	3 tuberculosis.	2 rendered, 1 buried.
Wilmington,	–	151	357	–	3 calves.	3 immature.	3 rendered.
Winchendon,	–	–	–	–	– –	– –	– –
Winchester,	–	–	–	–	– –	– –	– –
Windsor,	2	20	23	6	2 sheep.	2 tuberculosis.	2 buried.
Winthrop,	–	–	–	–	– –	– –	– –
WOBURN,	–	25	465	–	– –	– –	– –
WORCESTER,	705	701	287	–	17 cattle, 14 calves, 1 hog.	19 tuberculosis, 13 immature.	32 rendered.
Worthington,	2	23	8	4	– –	– –	– –
Wrentham,	–	3	7	–	– –	– –	– –
Yarmouth,	–	2	1	–	– –	– –	– –

In addition to the above, 1 goat was inspected in Chelmsford.

Summary.

Total number of carcasses inspected,			26,506
(*a*) Cattle,	5,158		
(*b*) Calves,	14,130		
(*c*) Hogs,	3,286		
(*d*) Sheep,	3,931		
(*e*) Goat,	1		
Total number of carcasses passed,			25,985½
Total number of carcasses condemned,			520½
(*a*) Cattle,	180½		
(*b*) Calves,	301		
(*c*) Hogs,	33		
(*d*) Sheep,	6		
Reasons for condemnation: —			
(*a*) Tuberculosis,		188	
Cattle,	162		
Calves,	6		
Hogs,	18		
Sheep,	2		
(*b*) Immature,		250	
Calves,	250		
(*c*) Hog cholera,		5	
Hogs,	5		
(*d*) Pneumonia,		2	
Cow,	1		
Hog,	1		
(*e*) Omphalitis,		7	
Calves,	7		
(*f*) Dysentery,		11	
Calves,	11		
(*g*) Icterus,		3	
Hogs,	3		
(*h*) Diarrhœa,		5	
Calves,	5		
(*i*) Anæmia,		1	
Calf,	1		
(*j*) Trichinosis,		1	
Hog,	1		
(*k*) Septicæmia,		1	
Cow,	1		
(*l*) Hydræmia,		1	
Cow,	1		

Reasons for condemnation — *Concluded.*			
(*m*) Caseous lymphadenitis,		1	
Sheep,	1		
(*n*) Nephritis,		1	
Cow,	1		
(*o*) Bronchitis,		1	
Hog,	1		
(*p*) Abscess,		1	
Cow,	1		
(*q*) Paralysis,		2	
Hogs,	2		
(*r*) Emaciated,		1	
Cow,	1		
(*s*) Blood poison,		1	
Cow,	1		
(*t*) Septic poison,		1	
Cow,	1		
(*u*) Weak condition,		8	
Calves,	6		
Sheep,	2		
(*v*) Old age,		1	
Cow,	1		
(*w*) Difficult parturition,		1	
Cow,	1		
(*x*) Strangulation,		1	
Calf,	1		
(*y*) Suffocation,		3	
Cow,	1		
Hogs,	2		
(*z*) Injured,		4	
Cattle,	3		
Sheep,	1		
(*aa*) Bruised,		14½	
Cattle,	2½		
Calves,	12		
(*bb*) Improperly prepared,		2	
Cattle,	2		
(*cc*) Decomposed,		2	
Calves,	2		
Total number of reasons for condemnation,			29

SUMMARY — *Concluded.*

Disposition of condemned carcasses: —

(*a*) Rendered,		390½	
Cattle,	151½		
Calves,	221		
Hogs,	14		
Sheep,	4		
(*b*) Buried,		108	
Cattle,	29		
Calves,	58		
Hogs,	19		
Sheep,	2		
(*c*) Fed to hogs,		19	
Calves,	19		
(*d*) Burned,		2	
Calves,	2		
(*e*) Owner took back,		1	
Calf,	1		
Total number of dispositions of carcasses,			5

The following cities and towns reporting upon the work of inspection rendered "Nothing to report": —

Bedford,	Halifax,	Plainville,
Boxborough,	Holbrook,	Plympton,
Brookline,	Kingston,	Rockport,
Burlington,	Lancaster,	Salem,
Chatham,	Longmeadow,	Saugus,
Dalton,	Marblehead,	Stoneham,
Dover,	Medford,	Stow,
Dunstable,	Middleton,	Swampscott,
Everett,	Newton,	Whitman.

During the month of October, 1913, the following convictions were secured because the inspector was not present at the time of slaughter and the carcasses of meat were unstamped: —

Name.	Place.	Fines imposed.
Frederick Friederich,	Pittsfield,	$1 and costs.
Max Otterburig,	Pittsfield,	$1 and costs.
M. D. Petrell,	Quincy,	$25
Total fines,		$27

In addition to the above, Caesar Cavigioli of Milford was found guilty of slaughtering without the inspector being present, and the case was placed on file. The license of Mr. Cavigioli was revoked in accordance with paragraph 15 of the slaughtering laws of Massachusetts.

REPORT ON INSPECTION OF DAIRIES.

During the month of October, 1913, 280 dairies were examined in the following places: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Amherst,	6	–	–	6	100.00
Second inspection,	24	8	33.33	16	66.67
Third inspection,	5	2	40.00	3	60.00
Fourth inspection,	6	1	16.67	5	83.33
Barre,	11	5	45.45	6	54.55
Second inspection,	38	19	50.00	19	50.00
Bolton,	1	–	–	1	100.00
Second inspection,	5	2	40.00	3	60.00
Third inspection,	22	11	50.00	11	50.00
Burlington,	–	–	–	–	–
Third inspection,	1	–	–	1	100.00
Lexington,	10	5	50.00	5	50.00
Second inspection,	5	1	20.00	4	80.00
Third inspection,	5	3	60.00	2	40.00
Fourth inspection,	9	6	66.67	3	33.33
Fifth inspection,	1	–	–	1	100.00
Lynn,	1	–	–	1	100.00
Second inspection,	7	4	57.14	3	42.86
Third inspection,	3	2	66.67	1	33.33
Fourth inspection,	5	2	40.00	3	60.00
Lynnfield,	3	1	33.33	2	66.67
Third inspection,	13	3	23.08	10	76.92
North Reading,	7	5	71.43	2	28.57
Second inspection,	1	–	–	1	100.00
Third inspection,	16	11	68.75	5	31.25
Fourth inspection,	2	–	–	2	100.00
Petersham,	–	–	–	–	–
Second inspection,	1	1	100.00	–	–
Reading,	3	–	–	3	100.00
Second inspection,	1	1	100.00	–	–
Third inspection,	11	6	54.55	5	45.45
Waltham,	3	2	66.67	1	33.33
Second inspection,	5	5	100.00	–	–
Third inspection,	12	8	66.67	4	33.33
Fourth inspection,	20	11	55.00	9	45.00
Wilmington,	7	4	57.14	3	42.86
Second inspection,	1	1	100.00	–	–
Third inspection,	9	2	22.22	7	77.78

Total number of dairies examined,	280
Number found to be free from objectionable conditions,	132
Number concerning which letters were sent,	148
Total number of conditions to which attention was called,	457
Percentage of dairies which passed inspection,	47.14

In addition to the above, 229 dairies were visited at which the sale of milk had been discontinued, 18 of which were making butter; also, 59 dairies were reported as producing less than 20 quarts of milk a day.

Included in the total number of dairies visited were 52 which had recently started in the milk-producing business and were inspected for the first time.

The names of the owners of the dairies found to be worthy of commendation follow: —

Amherst.

Certified.

Massachusetts Agricultural College * †

Class B.

Atkins, W. H.*
Cowles, Walter D.‡
Dickinson, R. D.*
Hendricks, J A.* †
Hobart, F. A.‡
Hobart, George F. § †
Houghton, Allen W.*
Little, Charles E.* †
Parsons, H. A.*
Wentworth, Edwin H.* †

Barre.

Class A.

Ellis, George H.* †

Class B.

Allen, W. Clayton *
Boutelle, Harry F.*
Carpenter, Fred
Clapp, (Miss) N. J.*
Cleveland, John T.*
Cummings, A. P.
Hancock, John, Jr.*
Howe, Daniel A.*
Lootz, A. C.
Loring, Frank E.*
Neylon, William *
Rice, Justin F.* †
Sheldon, O. D.
Smith, George F.
Smith, Leon P.*
Stetson Home * †
Stevens, Samuel D.* †
Sullivan, (Mrs.) John * †
Thrasher, Almon E.* †
Thrasher, Edward W.*
"Town Farm" * †
Valuski, Karny * †
Walcott, Clifton *

Bolton.

Class A.

Cunningham, Paul ‡ ||
Wheeler, James D.‡

Class B.

Balcom, Ezra A.‡
Burnam, R. E.‡
Cragg, M. R.‡
Duggan, M. J.‡
Gustason, L.*
Mace, C. E.‡
Mentzer, (Mrs.) Mary F. & M. H., Jr.*
Nourse, R. E.‡
Randall, R. E.‡
Schartner, Julius ‡
Wheeler, F. A.‡ ||

* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

Lexington.

Class AA.

Hatch, George C.‡

Class A.

Cutler, Clarence E.‡
Lawrence, S. M.
Martin, William T.* †
Swanson, Axel M.§ ||

Class B.

Belcher, Horace A.‡ ||
Bevington, A. J.
Bruce Brothers
Cary, A. B.
Kendall Brothers §
Kendall, (Mrs.) E. F.§
Kendall, Frank P.§
Reed, F. H.
Roberts, George H.§
Ryan, Patrick §

Lynn.

Class B.

Collyer, William P.*
Dearborn, Fred D.* †
Graham, Fred J.‡
Graham, John H.‡ ||
Harmon, G. W.* †
Nicholson, John * †
Phillips, A. O.§
Waitt, L. Alden § ||

Lynnfield.

Class B.

Fletcher, E. M.
Law, William B.‡
Newhall, Frank A.‡ ||
Phillips, William L.‡

North Reading.

Certified.

Gould, J. A. & W. H.‡ ||

Class A.

Putnam, G. H.
Turner, Joseph A.‡

Class B.

Batchelder, L. D.
Eisenhauer, I. W.
Forsythe, C. R.‡ ||
Gage, R. B.‡ †
Haywood, (Est. of) G. H.‡
Haywood, M. L.
Hinman, G. R.‡
Nichols, Charles H.‡
"Town Farm" ‡
Olmstead, A. S.‡ †
Tarbox, C. E.‡
Upton, Henry A.‡ ||
Watson, C. E.

Petersham.

Class B.

Connors, Patrick *

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

Reading.

Class A.

Blanchard, T. E., & Son ‡ ||
Lewis, L. B.‡ ||
Parker, W. S.‡ ||

Class B.

Batchelder, A. E.‡
Gleason, Rodney H.‡ ||
Parker, (Mrs.) Milton D.‡ †
Sanborn, D. C.* †

Waltham.

Certified.

Runkle, John C.§ ||
Warren, (Miss) Cornelia ‡ ||

Class AA.

Baker, R. B.‡ ||

Class A.

Anderson, John A.* †
Farnsworth, W. H.*
Griggs, Thomas G.§
Hubbard, C. U.§ ||
Smith, Charles F.§ ||
Smith, Nathan § ||
Stewart, Frank J.§

Class B.

Baldwin, James W.‡ ||
Caldwell, H. G.* †
Childs, Frank E.‡ †
Cooke, John A.§
Cunningham, H. R.
Hardy, Kirk § †
Lynch Brothers ‡
McAdoo, Robert J.* †
Reid, Frank ‡
Smith, E. P.* †
Stearns, W. B. & N. A.‡
Viles, Charles L.§ ||
Viles, Fred R.‡
Wellington, Edward §
Wellington, Joseph
Willard, H. N.§

Wilmington.

Class A.

Ralph, R. A.

Class B.

Bell, W. E.*
Eames, A. W.
Fay, Harold ‡ ||
Hathaway, (Mrs.) M. B.
Stevens, Tyler A.
"Town Farm" ‡ ||

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

THE SALE OF EGGS TAKEN FROM COLD STORAGE.

Acts of 1913, Chapter 538.

An Act relative to the Sale of Eggs taken from Cold Storage.

Be it enacted, etc., as follows:

Section 1. Whenever eggs that have been in cold storage are sold at retail, or offered or exposed for sale, the basket, box or other container in which the eggs are placed shall be marked plainly and conspicuously with the words "cold storage eggs", or there shall be attached to such container a placard or sign having on it the said words. If eggs that have been in cold storage are sold at retail or offered or exposed for sale without a container, or placed upon a counter or elsewhere, a sign or placard, having the words "cold storage eggs" plainly and conspicuously marked upon it, shall be displayed in, upon or immediately above the said eggs; the intent of this act being that cold storage eggs sold at retail or offered or exposed for sale shall be designated in such a manner that the purchaser will know that they are cold storage eggs. The display of the words "cold storage eggs", as required by this act, shall be done in such a manner as is approved by the state board of health.

Section 2. Violation of any provision of this act shall be punished by a fine of not less than ten dollars nor more than five hundred dollars for each offence. [*Approved April 25, 1913.*

At a meeting of the State Board of Health held Aug. 7, 1913, it was voted to modify the regulation made June 5, 1913, to read as follows: —

The sign or placard required by section 1 of chapter 538 of the Acts of 1913 to be placed upon or immediately above cold storage eggs, or upon the basket, box or other container in which cold storage eggs are placed, shall consist of the words "Cold Storage Eggs" printed in uncondensed Gothic type, in letters not less than 1 inch in height, printed in black on a white background, no other lettering to appear on or to be attached to said sign or placard. (This sign or placard to be used only where eggs are offered or exposed for sale.)

On Oct. 10, 1913, the State Board of Health voted to make the following additional regulation concerning the proper marking of cold storage eggs when sold to a purchaser: —

The marking required by section 1 of chapter 538 of the Acts of 1913, to be placed upon the bag, basket, box or other container in which cold storage eggs are placed, after having been sold to a purchaser, shall consist of the words "Cold Storage Eggs" printed or stamped in uncondensed Gothic type, in letters

not less than one-half inch in height, in black, purple or red ink, no other lettering to appear in connection with the words "Cold Storage Eggs." (This method of marking to appear on the bag, basket, box or other container in which eggs are delivered to the purchaser.)

CHANGES IN CERTAIN RULES AND REGULATIONS GOVERNING THE BUSINESS OF COLD STORAGE.

At a meeting of the State Board of Health held Nov. 6, 1913, it was voted to change paragraphs 8 and 15 of the Rules and Regulations Governing the Business of Cold Storage to read as follows: —

8. Broken eggs, packed in barrels, kegs, cans or any other container, if not intended for use as food shall be marked by the owner, when deposited in cold storage, with a stamp or label reading "Not for Food" on the side of the body of the container. The words "Not for Food" shall be indicated in letters not less than three-eighths of an inch in height, and a similar stamp or label shall be placed upon the side of any crate or other package containing more than a single can.

15. Any person, firm or corporation violating any of the provisions of the above rules and regulations shall be subject to a fine not exceeding $100 for each offence.

THE RAT: A SANITARY MENACE AND AN ECONOMIC BURDEN.[1]

By R. H. Creel, Passed Assistant Surgeon, United States Public Health Service.

Of all the parasites that have their being in and around the habitation of man the rat has less to justify its existence than any other. As devoid of any redeeming traits as the fly, which has been the subject of a nation-wide sanitary crusade, the rat is a greater pest because of its depredations and its possibilities for harm in the transmission and perpetuation of bubonic plague in a community. The latter consideration is of more serious import in seaport towns wherever they may be and in those localities where plague has once appeared, but with the world-wide march of bubonic plague in no city should its advent be considered as improbable.

Squirrels to the westward of the Rocky Mountains and the marmot in Asia are subject to the disease in a more or less chronic form, but

[1] From United States Public Health Reports, July 4, 1913.

these animals, on account of their infrequent contact with man, are a menace not so much in transmitting the disease to man as they are in being the source of a continued reintroduction of the disease among the neighboring rat population. It is, therefore, evident that the slogan "No rats, no plague" is very expressive of fact.

A brief review of the rôle this animal plays in transmitting disease and in damaging and destroying property will easily convict it of being a most undesirable denizen.

No discussion of the part taken by the rat in spreading plague will be attempted, except to say that plague is, primarily and essentially, a disease of rodents, chiefly the different species of rat, and that it is conveyed to human beings from plague-infected rats through the agency of the fleas which infest the sick animal.

When plague has once gained a foothold in a country, the cost of stamping out the infection will be manifold the expense attendant upon the eradication of any other epidemic disease. The toll of human life may vary according to local conditions, but always the commercial prejudice against a plague-infected port and the expenditure for eliminative measures will result in heavy financial drain.

Turning from the aspect of a sanitary menace to an ever-present and continued commercial drain, the following is of interest. To assign any accurately fixed sum to the amount of injury done by rats in the United States is impossible, but, estimating the loss at a rational minimum amount, the sum is astounding. The calculation embraces two factors, namely, the rodent census and the average amount of damage done by one rat. Both of these factors can be determined within reasonable limitation.

For antiplague work in the United States and its insular possessions, the Philippines, Hawaii and Porto Rico, there has been spent in recent years by the federal government, through the United States Public Health Service and by the different local government forces, a vast sum. The loss to commercial interests in all these places, due to interference of shipping facilities and sanitary restrictions by other countries, has made the sum actually spent for plague work seem but a "drop in the bucket."

The scope of this article will not permit of an extended discussion of the sanitary aspect of plague, but it may be stated that the disease is endemic on every continent in the world, and in practically all countries, excepting, possibly, those of continental Europe. In our own country any laxity of sanitary surveillance of the endemic centers on the Pacific coast would result in the broadcast spread of the disease. The same will apply to all endemic centers. It is a question of eternal vigilance.

By means of trapping percentages covering a period of one year it was determined that the rodent population in San Francisco was slightly in excess of the human population. In Porto Rico, where the same method of computation was employed, the proportion of rat and human inhabitants in cities was about equal.

In the rural districts of the United States the number of rats on any farm or plantation will easily average three or four times the number of people on the estate, and in the grain or cane producing areas the proportion will be multifold.

In cane-producing tropical and semitropical countries, such as Porto Rico, all the West Indies, the Hawaiian Islands and the Philippines, where the roof rat and field rat predominate, the rat population is incredibly large. On one cane plantation in Porto Rico where there were less than 500 people, within six months there were killed 25,000 rodents.

It is therefore evident that an estimate of the rodent population of the United States as equal to the human census would be well below the probable number. In our insular dependencies — Porto Rico, Hawaii, and the Philippines — where the cane fields are especially overrun with rats, the rodent population is undoubtedly several times the human population.

This estimate of one rat per human being for the continental United States coincides with that made for Great Britain and Ireland by the Incorporated Society for the Destruction of Vermin, and also with authoritative figures for Denmark, France and Germany.

The annual upkeep per rodent was computed by the same authorities as $1.80 in Great Britain, $1.20 in Denmark and $1 in France. Judging from the large number of complaints made by American farmers in writing to agricultural journals, the depredations of rats in the country will exceed the estimate made in Great Britain. One-half cent per day would be a conservative estimate, however. The same figure can safely be placed on the damage caused by the city rat.

The list of articles damaged by rats is too long to enumerate in detail, but in general the following can be mentioned: all kinds of grain, before and after harvest; eggs and poultry, especially small chicks; wild birds, their eggs and young; fruits and vegetables, both while growing and when stored; flowers, bulbs and shrubbery; all kinds of staples in bags or boxes; and all food products in pantries, groceries, meat markets, bakeries, stables and general markets.

Lantz, in the Public Health Bulletin No. 30, "The Rat and its Relation to Public Health," cites the following specific cases of rat depredation. Presumably they were selected at random: —

An Iowa farmer writing to an agricultural journal reported that rats had destroyed in one winter about 500 bushels of corn of a total of 2,000 bushels stored in cribs. Another farmer reported that rats had robbed him of an entire summer's hatching of three or four hundred chicks, and still another one attributed his loss in grain and poultry for one season due to rats as sufficient to pay his taxes for three years.

Lantz further quotes a Washington merchant to the effect that rats gnawed a hole in a tub containing 100 dozen eggs, and within a period of two weeks carried away 71 dozen without leaving either shell or stain.

The writer once observed in San Francisco a shop dedicated to the sale of manicure supplies that was so rat-infested that the proprietor had to move. The shop adjoined a bakery, and the depredations of the rats were so great that they actually entered a glass display case and gnawed the chamois skin on nail polishers. The reports of experimental stations in Guam, Hawaii and Porto Rico lay special stress on the depredations of rats in the cane fields. Mr. R. L. Van Dine of the Porto Rico experimental station places the annual loss to cane growers in the island at $75,000, and states the loss is due not only to the cane actually destroyed, but also to the fermentation set up in the cane juices in the stalks that have been gnawed upon, which reduces the purity and sucrose content. This loss to Porto Rico planters was based upon the estimate that only one-half of one per cent. of stalks were attacked by rats, but in reply to inquiries sent out by Van Dine the estimate made by different planters varied from 1 to 4 per cent. of stalks attacked by rodents.

Because the rat is an animal of nocturnal habits its depredations often pass unnoticed or are ascribed to other sources. Computing the upkeep of the rat as one-half cent per day, and estimating one rat to each person, the sum of $167,000,000 annually is lost to the country by the depredations of this pest.

A ratless country seems almost Utopian, but much can be accomplished in preventing this unnecessary loss and in safeguarding the country from any possible plague invasion, by a concerted and well-sustained nation-wide crusade against the rat similar to the "swat the fly campaign." No sporadic or individual effort will suffice.

The extermination of rats is not nearly so easy as fly destruction. An adult rat will on the average produce young 6 times yearly and from 6 to 12 young in each litter. There have been known cases where a full-grown female littered 12 times in one year. A rat can reproduce when three months old. This remarkable fecundity, together with the instinctive secretive habits of the rat, — which being an

animal of nocturnal habits lies hidden during the day and is active at night, while his human foe is asleep, — readily accounts for the large rat population in any locality and emphasizes the difficulty of rat destruction.

Rats can be destroyed by trapping, by poisoning and by using natural enemies, as certain breeds of cats and dogs. To insure success to these measures it will be necessary to curtail the rat's food supply by properly disposing of garbage and table refuse and by preventing rats from gaining access to such food as is contained in pantries, groceries, markets, stables, etc. The municipal government will have to assist the efforts of citizens along this line by creating and enforcing suitable rat-proofing laws.

To merely keep premises clean and free of rubbish will be of but little benefit, as rodents generally, even when abundant rubbish is available, prefer more secure covert, as that beneath floors, and within double walls and ceilings. So along with other measures for the destruction of rats all buildings, chicken yards, garbage receptacles, sidewalks and planked areas must be built or repaired to prevent rat harborage.

The rat-proofing of buildings is generally secured either by elevation of the structure, with the underpinning open and free, or by marginal rat-proof walls of concrete, or stone or brick laid in cement mortar, sunk 2 feet into the ground, fitting flush the floor above. The wall must fit tightly to the flooring and not merely extend to the joists or supporting timbers, as this would result in open spaces for the entrance of rodents. Groceries, stables, warehouses, markets and food depots in general are best rat-proofed by having a concrete floor in addition to the walls. In these structures, untenanted as they are at night-time, rats might well enter by a doorway or window carelessly left open, or be introduced concealed in merchandise, and gnawing through plank flooring obtain a well-protected hiding and breeding place.

In addition to concrete floor and walls these food depots must have tight-fitting doors, and all windows and openings should be properly screened. A 12-gauge wire is preferable on account of its strength and durability, and the mesh should not be larger than one-half inch.

Rat proofing by elevation is chiefly applicable to small and medium size frame dwellings. The intent is to have sufficient elevation, about 2 feet, so that the ground area beneath will be as exposed and free from covert as unbuilt-upon land. Marginal rat-proofing will suffice in more pretentious dwellings where sufficient care can be exercised to prevent rats from gnawing through the plank floors.

Chicken pens can be protected by concrete walls at the periphery,

sunk into the ground 2 feet or more, with one-half-inch mesh wire netting covering sides and top. Garbage cans should be of serviceable metal with properly fitting tops.

Plank sidewalks and plank coverings for yards should be avoided. Cinders or concrete are preferable for this purpose. The latter should have marginal protection to prevent rats from burrowing beneath it.

Double walls with a dead space between should be avoided, or, if used, they should be rat-proofed at top and bottom with heavy wooden timbers, 4 by 4 joists, or by a concrete fill. Attics should be well opened and kept free of dunnage or other refuge for rats.

These precautions against rat harborage and for the protection of food supplies, in connection with careful trapping and poisoning, will be attended with considerable success toward the destruction of rats.

As to trapping and poisoning it may be stated that the efficacy of these measures will depend not so much on the kind of poison or on the pattern of the trap or the bait as upon the method of placing the poison and traps. The larger the wire-cage trap the better the results. It goes without saying that both the snap traps and the cage traps should be substantially made, and the latter should have wires well re-enforced.

There are several important points about placing traps. They should be placed wherever rats have been accustomed to frequent for feeding purposes. Traps should be more or less concealed, the small snap traps by scattering dust, flour or cornmeal on and about them, and the cage traps by pieces of sacking, straw or rubbish, leaving only the opening free. The prerequisite of successful trapping is that no food other than the bait should be available to the foraging rodent. Other things being equal, highly savory articles, such as cheese and toasted bacon, will more quickly attract rodents than will food without odor, but the idea that a rat can be enticed into a trap by the employment of bait more appetizing to him than the surrounding food supply is fallacious. To the rat, food supply is a question of availability, not preference. A number of specific cases have impressed this upon the writer. In one instance where a bakery was overrun with rats, a most experienced trapper set traps in and around the place for two or three weeks without catching a single rodent. This barren result continued notwithstanding the rotation of bait. Cheese, bacon, meat, vegetables, flour, nuts and every known kind of bait in turn was used without avail. The rodents played and cavorted about the traps but never entered. Finally the bakery was moved and the building closed preparatory to rat-proofing. Three or four days after the removal of the stock, when all loose flour and food had

been consumed by the rats, the trapper caught over 30 rats in one morning, and in four days the place yielded a bag of some 80 rodents.

Traps or poison placed in the neighborhood of an overflowing garbage pail, in a pantry with open bins and exposed food, or in groceries and warehouses having foodstuffs spilled over the floor, will only result in wasted endeavor.

Trapping is preferable to poisoning for the reason that the results are accurately known, whereas in poisoning the result is always a matter of conjecture. Both methods should be employed, however. For the individual householder any of the poisons obtainable in open market and which have arsenic, phosphorus or strychnine as the active ingredient will be effective if properly used.

THE RATS OF OUR CITIES:[1] WHAT BECOMES OF THE CARCASSES OF RATS DYING NATURAL DEATHS?

By Victor G. Heiser, Surgeon, United States Public Health Service, Chief Quarantine Officer and Director of Health for the Philippine Islands.

In connection with the rat-destroying campaign which has been conducted in Manila during the past year a number of interesting considerations have presented themselves. As an explanation of the observed facts might be of value in exterminating rats in the future, the following brief report is made with the hope that a solution may result.

It has been estimated that in the average city there is at least one rat per inhabitant, but granting that there is only one rat for every two inhabitants, or even less, the fact still remains that there must be at least a certain rat mortality from natural causes each day or month. The average life of a rat is said to be approximately five years. In round numbers the population of Manila is about 300,000 persons. Estimating, then, for instance, that there is only one rat for every two persons this would mean a mortality of 150,000 rats each five years, or 30,000 per year, or 2,500 rats per month, or an average daily mortality of about 82 rats.

There is a thorough daily collection of garbage, refuse and street sweepings in the city of Manila, and this combined material is hauled to the public crematory. There is practically no other way in the city of Manila to dispose of refuse or other discarded material. Stoves are practically unknown, and on account of the high price of fuel, fires

[1] From United States Public Health Reports, July 25, 1913.

are of the most primitive nature and could not readily be used for burning so large an object as a rat, so that from the foregoing it is evident that if rats dying of natural causes were found, at least a great proportion of them would be placed in the garbage or refuse can, or be found in the street sweepings. The employees of the crematory have repeatedly reported during the past year that they seldom find any rats during the process of dumping the contents of the containers into the furnaces.

In order further to test this statement a regular sanitary inspector of the bureau of health was stationed in the crematory for a period of one month, and so far as practical he saw the contents of each can or receptacle dumped, and during the entire month he found only one dead rat.

It is quite possible, of course, that a certain percentage of rats die in inaccessible places, but owing to the rapid decomposition which takes place in a tropical climate the odors which arise soon attract attention. The records of the bureau of health show that comparatively few nuisances of this kind are discovered each month.

As further evidence that no considerable number of rats die in out-of-the-way places, it has been the experience of the gangs of rat destroyers, amounting to over 300 men, seldom to find a dead rat that has not died of poison placed for it or from some other readily explainable cause. These rat gangs clean block after block of houses and yards in the most systematic and thorough manner. They start first by moving everything in the houses, opening boxes, barrels, etc., in which rats might harbor, and then gradually work their way to the yard until everything is examined. All dirt, filth, straw, etc., is moved and burned; boxes are moved about, woodpiles are taken down and repiled. Live rats are frequently encountered in these operations and are promptly killed by means of dogs or clubs. Many hundreds of city blocks have been cleaned and recleaned in this way, and yet it is a most exceptional occurrence to find a dead rat.

The question now is, What becomes of these 2,500 rats that are presumably dying in Manila each month from natural causes? It has been suggested that perhaps they die in the sewers, but it is not very probable that any considerable numbers die there because the sanitary sewer system is a closed one; and on account of the fact that it is used for sanitary fixtures only, it would be impossible for a rat to gain access to the sewer. The great majority of the storm sewers are flushed at least once and sometimes twice each day by the high tide, and the many observations made of the sewer outlets do not show the presence of dead rats. It is thought, perhaps, that the dead rats

may have been eaten by other rats, but it may be urged against this contention that it is very rare to find any carcasses of partly eaten rats or parts of skeletons of rats.

From the foregoing it appears that at least many hundreds of rats disappear each month in Manila by natural means, the exact nature of which is not known, but if it could be discovered the knowledge might be useful in the destruction of rats.

ANTIMENINGITIS SERUM.

The State Board of Health is prepared to furnish free to physicians and citizens of the Commonwealth, in a manner similar to that employed with diphtheria antitoxin, a curative serum for use in cases of cerebro-spinal meningitis. This antimeningitis serum is obtained from the horse after prolonged treatment with a number of strains of the diplococcus of meningitis. It is of no service in other infectious diseases. It is administered subdurally and not by the subcutaneous or intravenous route. It is urged, furthermore, that whenever a reliable microscopic examination of the cerebro-spinal fluid withdrawn cannot be made at once, the fluid should be sent to the nearest accessible laboratory, or to the laboratory of the State Board of Health. The specific diplococci disappear rapidly from the fluid, and may not be found later than six hours after withdrawal from the spinal canal.

1. When lumbar puncture (in fourth lumbar space, or higher if necessary) is performed in a suspicious case, be prepared to inject the serum. If the cerebro-spinal fluid withdrawn is cloudy, make the injection of serum immediately and without waiting for a bacteriological examination. The subsequent doses of the serum are to be given only if the *Diplococcus intracellularis* has been demonstrated.

2. Always withdraw as much cerebro-spinal fluid as possible at each puncture and inject full doses of the serum. Thirty cubic centimeters of serum should be injected in every instance in which this quantity of fluid or less has been removed, unless a distinctly abnormal sense of resistance in the spinal canal is encountered after as much serum has been injected as fluid has been removed. When the amount of fluid withdrawn exceeds 30 cubic centimeters, introduce a large quantity of serum — up to 45 cubic centimeters, or even more. In the very severe or fulminating cases inject from 30 to 45 cubic centimeters of serum, without reference to the quantity of fluid removed unless abnormal resistance is encountered.

3. In very severe or fulminating cases repeat the injection of serum within the first twenty-four-hour period, as soon as the symptoms intensify, or, where the condition remains stationary, after the lapse of the first twelve hours.

4. In cases of average severity make daily injections of full doses for four days. If diplococci persist after the fourth dose, continue the injections until they have disappeared.

5. If the subjective symptoms, including fever and mental impairment, persist after the diplococci have disappeared, or after the four doses have been given, and improvement is not progressing, wait four days, if the condition is stationary, and then repeat the four injections. Should the symptoms have become worse before the expiration of this period, the injections should be resumed immediately.

6. In relapse, which is indicated either by reappearance of the diplococci in the cerebro-spinal fluid or recrudescence of the symptoms, the four doses at twenty-four-hour intervals are to be repeated, and the subsequent treatment is to be conducted as for the original attack.

7. This plan of treatment is to be followed until the patient is free of symptoms, the diplococci disappear from the cerebro-spinal fluid, or the chronic stage of the disease supervenes. The serum has proven of some benefit in the chronic stages, in which the diplococci are still present in the meninges. When the condition of hydrocephalus has been established, the injection of serum into the spinal canal offers little of value. It is possible that direct intraventricular injections may be of benefit in this condition. (*From directions issued by the Rockefeller Institute, New York: abstracted from paper by Charles Hunter Dunn, Boston Medical and Surgical Journal, 1908.*)

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TABLE OF CONTENTS.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

RETURNS OF DISEASES.

Cases of Diseases declared by the State Board of Health to be Dangerous to the Public Health.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

DISEASE.	Week ending —					
	Nov. 1.	Nov. 8.	Nov. 15.	Nov. 22.	Nov. 29.	Total.
Diphtheria,	158	155	160	177	160	810
Measles,	73	83	94	79	77	406
Scarlet fever,	128	127	176	188	207	826
Typhoid fever,	60	61	54	48	27	250
Tuberculosis, pulmonary (or not classified),	131	133	117	166	129	676
Tuberculous meningitis,	5	1	–	7	2	15
Tuberculosis, other forms,	5	6	21	4	–	36
Cerebro-spinal meningitis,	4	2	1	3	6	16
Whooping cough,	36	54	62	80	34	266
Varicella,	48	54	62	95	64	323
Ophthalmia neonatorum,	46	47	57	57	45	252
Anterior poliomyelitis,	22	14	11	4	4	55
Smallpox,	1	–	–	3	2	6
Trachoma,	1	–	–	4	–	5
Tetanus,	–	–	–	1	1	2
Typhus fever,	–	–	1	–	–	1
Leprosy,	–	–	1	–	–	1

Cases of Infectious Diseases not included in the Above Table.

[Cases not notifiable under the provisions of section 52 of chapter 75 of the Revised Laws.]

DISEASE.	Week ending —					
	Nov. 1.	Nov. 8.	Nov. 15.	Nov. 22.	Nov. 29.	Total.
Mumps,	1	3	4	–	4	12
Erysipelas,	1	1	–	–	–	2

RETURNS OF DEATHS.

DEATHS FROM DISEASES DECLARED BY THE STATE BOARD OF HEALTH TO BE DANGEROUS TO THE PUBLIC HEALTH IN CITIES AND TOWNS OF MORE THAN 10,000 POPULATION.

[Under the provisions of chapter 210, Acts of 1913.]

Week ending Nov. 1, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	34[1] 39[2]	27[1] 30[2]	1[1] 2[2]	1[1] 2[2]	– –	4[1] 4[2]	– –	– –	1[1] 1[2]	– –
Worcester,	145,986	–	–	–	–	–	–	–	–	–	–
Fall River,	119,295	4	2	–	–	1	1	–	–	–	–
Lowell,	106,294	6	2	1	1	1	1	–	–	–	–
Cambridge,	104,839	2	2	–	–	–	–	–	–	–	–
New Bedford,	96,652	5	1	4	–	–	–	–	–	–	–
Lynn,	89,336	3	3	–	–	–	–	–	–	–	–
Springfield,	88,926	2	1	–	1	–	–	–	–	–	–
Lawrence,	85,892	1	–	–	–	–	–	–	–	1	–
Somerville,	77,236	2	2	–	–	–	–	–	–	–	–
Holyoke,	57,730	1	1	–	–	–	–	–	–	–	–
Brockton,	56,878	5[3]	1	1	1	1	–	–	–	–	–
Malden,	44,404	1	1	–	–	–	–	–	–	–	–
Haverhill,	44,115	1	1	–	–	–	–	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	1	1	–	–	–	–	–	–	–	–
Taunton,	34,259	3	2	–	–	–	–	1	–	–	–
Everett,	33,484	–	–	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	1	1	–	–	–	–	–	–	–	–
Pittsfield,	32,121	4	3	–	–	–	–	–	–	–	1
Waltham,	27,834	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	1	–	–	–	–	1	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	1	1	–	–	–	–	–	–	–	–
North Adams,	22,019	2	2	–	–	–	–	–	–	–	–
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	1	–	–	1	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	3	3	–	–	–	–	–	–	–	–
Westfield,	16,044	–[1] 1[2]	–[1] 1[2]	– –	– –	– –	– –	– –	– –	– –	– –
Peabody,	15,721	1	1	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	1	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	1	1	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	1[3]	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	1	1	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,985,071	95	65	8	6	3	7	1	–	2	1

[1] Nonresidents deducted. [2] Total deaths. [3] One death from anterior poliomyelitis.

Week ending Nov. 8, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	29[3] 32[4]	19[1] 19[2]	5[1] 5[2]	– 1[2]	2[1] 3[2]	1[1] 2[2]	– –	– –	1[1] 1[2]	– –
Worcester,	145,986	–	–	–	–	–	–	–	–	–	–
Fall River,	119,295	3	2	–	–	1	–	–	–	–	–
Lowell,	106,294	7	1	2	2	1	–	–	–	–	1
Cambridge,	104,839	7	7	–	–	–	–	–	–	–	–
New Bedford,	96,652	5	3	1	–	1	–	–	–	–	–
Lynn,	89,336	3	2	–	–	1	–	–	–	–	–
Springfield,	88,926	1	1	–	–	–	–	–	–	–	–
Lawrence,	85,892	1	–	–	1	–	–	–	–	–	–
Somerville,	77,236	1	1	–	–	–	–	–	–	–	–
Holyoke,	57,730	1	1	–	–	–	–	–	–	–	–
Brockton,	56,878	3[5]	1	–	–	1	–	–	–	–	–
Malden,	44,404	3	2	–	1	–	–	–	–	–	–
Haverhill,	44,115	2	–	–	–	1	–	–	–	–	1
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	–	–	–	–	–	–	–	–	–	–
Taunton,	34,259	2	2	–	–	–	–	–	–	–	–
Everett,	33,484	1	1	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	–	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	1	–	–	–	–	–	1	–	–	–
Waltham,	27,834	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	1	1	–	–	–	–	–	–	–	–
Chicopee,	25,401	1	–	–	–	1	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	1	–	–	1	–	–	–	–	–	–
North Adams,	22,019	1	1	–	–	–	–	–	–	–	–
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	–	–	–	–	–	–	–	–	–	–
Peabody,	15,721	2	–	1	–	–	1	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	–	–	–	1	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	1	1	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	1	1	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	1	1	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,922,307	83	48	9	6	11	3	1	–	1	2

[1] Nonresidents deducted.

[2] Total deaths.

[3] Nonresidents deducted: one death from anterior poliomyelitis.

[4] Total deaths: one death from anterior poliomyelitis.

[5] One death from anterior poliomyelitis.

Week ending Nov. 15, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	24[1] 26[2]	17[1] 18[2]	– –	1[1] 1[2]	1[1] 2[2]	1[1] 1[2]	1[1] 1[2]	– –	2[1] 2[2]	1[1] 1[2]
Worcester,	145,986	–	–	–	–	–	–	–	–	–	–
Fall River,	119,295	4	4	–	–	–	–	–	–	–	–
Lowell,	106,294	1	1	–	–	–	–	–	–	–	–
Cambridge,	104,839	6	6	–	–	–	–	–	–	–	–
New Bedford,	96,652	5	5	–	–	–	–	–	–	–	–
Lynn,	89,336	5[3]	4	–	–	–	–	–	–	–	–
Springfield,	88,926	–	–	–	–	–	–	–	–	–	–
Lawrence,	85,892	1	1	–	–	–	–	–	–	–	–
Somerville,	77,236	2[3]	1	–	–	–	–	–	–	–	–
Holyoke,	57,730	2	1	–	–	1	–	–	–	–	–
Brockton,	56,878	4	1	–	–	3	–	–	–	–	–
Malden,	44,404	1	–	–	–	–	–	1	–	–	–
Haverhill,	44,115	–	–	–	–	–	–	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	2	1	–	–	1	–	–	–	–	–
Taunton,	34,259	3[4]	–	1	–	1	–	–	–	–	–
Everett,	33,484	–	–	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	2	2	–	–	–	–	–	–	–	–
Pittsfield,	32,121	2	1	–	–	–	–	1	–	–	–
Waltham,	27,834	2	1	1	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	2	2	–	–	–	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	4	1	–	–	1	2	–	–	–	–
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	1	–	–	1	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	–[1] 1[2]	–[1] 1[2]	– –	– –	– –	– –	– –	– –	– –	– –
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	1	–	–	–	–	–	–	–	–
Gardner,	14,699	1	–	–	–	1	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	1	1	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	1	–	1	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,826,494	80	53	3	2	10	3	3	–	2	1

[1] Nonresidents deducted.
[2] Total deaths.
[3] One death from tetanus.
[4] One death from typhus fever.

Week ending Nov. 22, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	17[1]	10[1]	3[1]	–	1[1]	–[1]	3[1]	–	–	–
		18[2]	10[2]	3[2]	–	1[2]	1[2]	3[2]	–	–	–
Worcester,	145,986	–	–	–	–	–	–	–	–	–	–
Fall River,	119,295	6	4	1	–	1	–	–	–	–	–
Lowell,	106,294	5	3	–	–	1	1	–	–	–	–
Cambridge,	104,839	5[3]	2	–	–	–	–	–	1	1	–
New Bedford,	96,652	4	2	–	1	1	–	–	–	–	–
Lynn,	89,336	1	–	–	–	–	–	–	–	–	1
Springfield,	88,926	–	–	–	–	–	–	–	–	–	–
Lawrence,	85,892	–	–	–	–	–	–	–	–	–	–
Somerville,	77,236	3	1	1	–	–	1	–	–	–	–
Holyoke,	57,730	7	2	–	1	3	–	1	–	–	–
Brockton,	56,878	2	2	–	–	–	–	–	–	–	–
Malden,	44,404	3	1	–	1	–	–	–	–	–	1
Haverhill,	44,115	2[4]	1	–	–	–	–	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	–	–	–	–	–	–	–	–	–	–
Taunton,	34,259	2	1	–	–	–	–	1	–	–	–
Everett,	33,484	2	2	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	1	–	–	1	–	–	–	–	–	–
Pittsfield,	32,121	1	–	–	–	1	–	–	–	–	–
Waltham,	27,834	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	2	2	–	–	–	–	–	–	–	–
Chicopee,	25,401	1	–	–	–	1	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	1	–	–	1	–	–	–	–	–	–
North Adams,	22,019	2	1	–	–	1	–	–	–	–	–
Northampton,	19,431	–	–	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	1	–	–	–	1	–	–	–	–	–
Attleborough,	16,215	1	1	–	–	–	–	–	–	–	–
Westfield,	16,044	–	–	–	–	–	–	–	–	–	–
Peabody,	15,721	1	1	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	1	1	–	–	–	–	–	–	–	–
Newburyport,	14,949	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	1	–	–	–	1	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	1	1	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	1	–	–	1	–	–	–	–	–	–
Greenfield,	10,427	1	–	–	1	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,827,712	76	38	5	7	12	3	5	1	1	2

[1] Nonresidents deducted.
[2] Total deaths.
[3] One death from anterior poliomyelitis.
[4] One death from ophthalmia neonatorum.

Week ending Nov. 29, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	32[3] 33[4]	21[1] 22[2]	1[1] 1[2]	2[1] 2[2]	2[1] 2[2]	2[1] 2[2]	– –	1[1] 1[2]	1[1] 1[2]	– –
Worcester,	145,986	–	–	–	–	–	–	–	–	–	–
Fall River,	119,295	4	3	–	–	1	–	–	–	–	–
Lowell,	106,294	–	–	–	–	–	–	–	–	–	–
Cambridge,	104,839	2	2	–	–	–	–	–	–	–	–
New Bedford,	96,652	2	–	–	–	–	1	–	–	1	–
Lynn,	89,336	3	1	–	2	–	–	–	–	–	–
Springfield,	88,926	1	1	–	–	–	–	–	–	–	–
Lawrence,	85,892	5	3	–	1	–	–	1	–	–	–
Somerville,	77,236	4	3	–	1	–	–	–	–	–	–
Holyoke,	57,730	4	3	–	–	1	–	–	–	–	–
Brockton,	56,878	1	–	–	–	1	–	–	–	–	–
Malden,	44,404	2	–	–	–	1	–	–	–	–	1
Haverhill,	44,115	1	–	–	–	–	–	–	–	–	1
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	–	–	–	–	–	–	–	–	–	–
Taunton,	34,259	–	–	–	–	–	–	–	–	–	–
Everett,	33,484	–	–	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	1	1	–	–	–	–	–	–	–	–
Pittsfield,	32,121	3	1	–	–	1	–	1	–	–	–
Waltham,	27,834	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	–	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	1	1	–	–	–	–	–	–	–	–
Beverly,	18,650	1	–	–	–	–	–	–	–	1	–
Revere,	18,219	1	1	–	–	–	–	–	–	–	–
Leominster,	17,580	1	–	–	–	1	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	–[1] 1[2]	–[1] 1[2]	– –	– –	– –	– –	– –	– –	– –	– –
Peabody,	15,721	1	–	–	–	1	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	1	1	–	–	–	–	–	–	–	–
Newburyport,	14,949	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	1	1	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	1	1	–	–	–	–	–	–	–	–
Framingham,	12,948	1	–	–	1	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	1	–	1	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,787,157	77	46	2	7	9	3	2	1	3	2

[1] Nonresidents deducted.
[2] Total deaths.
[3] Nonresidents deducted: two deaths from ophthalmia neonatorum.
[4] Total deaths: two deaths from ophthalmia neonatorum.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Towns of Less than 10,000 Population.

[Under the provisions of chapter 210, Acts of 1913.]

DISEASE.	Place.	Week ending — Nov. 1.	Nov. 8.	Nov. 15.	Nov. 22.	Nov. 29.
Tuberculosis, pulmonary (or not classified).	Amesbury, .	–	–	–	–	1
	Ashfield, . .	1	–	–	–	–
	Bridgewater, .	1	1	–	–	1
	Dalton, . .	–	–	1	–	–
	Douglas, . .	–	2	–	–	–
	Erving, . .	–	–	–	1	–
	Hadley, . .	–	–	–	–	1
	Ipswich, . .	–	–	–	1	–
	Medfield, . .	–	–	–	–	2
	Norwood, . .	–	–	–	1	–
	Spencer, . .	–	–	–	1	–
	Winchendon, .	–	–	–	1	–
Total, . . .	. . . . .	2	3	1	5	5
Diphtheria, . . .	Danvers, . .	–	–	1	–	–
	Deerfield, . .	–	–	–	–	1
	Dracut, . .	–	–	–	–	1
	Goshen, . .	–	1	–	–	–
	Ludlow, . .	–	–	–	1	1
	Oak Bluffs, .	–	–	1	–	–
	Rochester, .	–	–	–	–	1
	Tisbury, . .	–	–	1	–	–
	Townsend, .	–	–	1	–	–
	Winchester, .	–	–	–	1	–
Total, . . .	. . . . .	–	1	4	2	4
Typhoid fever, . .	Grafton, . .	1	–	–	–	–
	Ludlow, . .	–	–	1	–	–
	N. Attleborough,	–	1	–	–	1
	Templeton, .	–	–	1	–	–
Total, . . .	. . . . .	1	1	2	–	1
Measles, . . .	Grafton, . .	–	–	1	–	–
	Ludlow, . .	–	1	–	–	–
	Southwick, .	–	–	–	–	1
Total, . . .	. . . . .	–	1	1	–	1
Whooping cough, .	Danvers, . .	–	–	–	–	1
Cerebro-spinal meningitis.	Cochituate, .	1	–	–	–	–
	Danvers, . .	–	–	–	1	–
	Dedham, . .	–	–	–	–	1
	Palmer, . .	–	–	1	–	–
Total, . . .	. . . . .	1	–	1	1	1

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Towns of less than 10,000 Population.

DISEASE.	Place.	Week ending — Nov. 1.	Nov. 8.	Nov. 15.	Nov. 22.	Nov. 29.
Chicken pox, . .	Fairhaven, .	–	–	–	1	–
Anterior poliomyelitis,	Hatfield, . .	–	1	–	–	–
	Middleborough,	–	–	–	–	2
Total, . . .	. . . . .	–	1	–	–	2
Malignant pustule, .	Dracut, . .	–	1	–	–	–
	Middleborough,	–	–	–	–	2
Total, . . .	. . . . .	–	1	–	–	2

REPORT ON INSPECTION OF FOOD AND DRUGS.

Laboratory Examinations of Food and Drugs.

The following summary presents the results of the laboratory examinations during the month of November, 1913, of samples of food and drugs collected by inspectors of the Board: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Breakfast food,	1	–	1
Butter,	39	2	41
Canned fruits and vegetables,	4	–	4
Cider,	8	21	29
Cocoa,	1	–	1
Condensed milk,	2	–	2
Confectionery,	2	–	2
Cream,	94	21	115
Cream of tartar,	6	–	6
Drugs,	32	12	44
Flavoring extracts: —			
Ginger,	2	–	2
Vanilla,	4	–	4
Honey,	1	–	1
Horse-radish,	1	–	1
Ice cream,	1	–	1
Jams,	1	–	1
Lard,	46	2	48
Maple syrup,	1	–	1
Meat products: —			
Hamburg steak,	32	6	38
Mince meat,	3	–	3
Sausages,	22	7	29
Milk,	375	113	488
Olive oil,	2	–	2
Pickles,	2	–	2
Spices,	11	–	11
Syrup,	1	–	1
Table sauce,	2	–	2
Wine,	2	–	2
Total,	698	184	882

The samples of drugs found to be adulterated were alcohol, spirit of nitrous ether, spirit of anise, spirit of camphor, spirit of peppermint, tincture of iodine, tincture of ginger and blue ointment.

The cities and towns in which samples were collected were: Arlington, Boston, Brockton, Brookfield, Cambridge, Cheshire, Chicopee, Dracut, Easthampton, Gloucester, Hinsdale, Lanesborough, Lowell, Ludlow, Lynn, Malden, Medford, Melrose, New Bedford, Newton, Northampton, Pittsfield, Plymouth, Quincy, Reading, Revere, Springfield, Stoneham, Taunton, Waltham, Watertown, Westfield, Weymouth, Winchester, Woburn.

Prosecutions for Violations of the Law relating to Food and Drugs.

Nineteen convictions were secured during the month of November, 1913, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Bernier & Co., . .	Easthampton,	Alcohol (not U. S. P.).
2	Andrew Hacking, . .	Stoneham, .	Cider (benzoic acid).[1]
3	Alden Brothers Company, .	Winthrop, .	Cream (fat, 18.6).[2]
4	Albany Cash Market, Inc.,	Pittsfield, .	Hamburg steak (sulphurous acid).
5	Michael McDevitt, . .	Woburn, .	Milk (total solids, 10.10).[2]
6	James Given, . . .	Woburn, .	Milk (total solids, 11.40).[3]
7	Jacob F. Kirchner, . .	Dalton, .	Milk (total solids, 10.48).[2]
8	Thomas E. Spittle, . .	Gloucester, .	Milk (total solids, 8.88).[1, 2]
9	George E. Waldron, . .	Gloucester, .	Milk (total solids, 10.84).[1, 2]
10	George E. Waldron, . .	Gloucester, .	Milk (total solids, 11.24).[1, 2]
11	Walter E. Bartlett, . .	Easthampton,	Milk (total solids, 9.54).[3]
12	John Levonis, . . .	Easthampton,	Milk (total solids, 9.74).[3]
13	John Levonis, . . .	Easthampton,	Milk (total solids, 11.20).[2]
14	Simon Wiseberg, . .	Malden, .	Milk (total solids, 10.82).[3]
15	Augustus Schnopt, . .	Hinsdale, .	Milk (total solids, 11.12).[2]
16	Edward Williams, . .	Spencer, .	Milk (total solids, 10.30).[2]
17	Thomas H. Farrell, . .	Pittsfield, .	Spirit of camphor (not U. S. P.).
18	Dr. Clarence A. Waite, .	Pittsfield, .	Sweet spirit of nitre (not U. S. P.).
19	Honorius J. Sorel, . .	Easthampton,	Tincture of iodine (not U. S. P.).

[1] Appealed. [2] Watered. [3] Skimmed.

Fines imposed, $750.

List of Adulterated or Improperly Labeled Foods, etc., for November, 1913.

The following shows the adulterated or improperly labeled foods, etc., during the month of November, 1913: —

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
22590	Spirit of anise,	Lucius S. Davis, Northampton, Mass.,	52 per cent. of U. S. P. strength.
4592–R	Spirit of camphor,	Thomas H. Farrell, Pittsfield, Mass.,	60 per cent. of U. S. P. strength.
22616	Spirit of nitrous ether,	Joseph A. Martin, Boston, Mass.,	64 per cent. of U. S. P. strength.
4588–R	Spirit of nitrous ether,	Dr. Clarence H. Waite, Pittsfield, Mass.,	77 per cent. of U. S. P. strength.
22719	Essence of peppermint,	Walker-Rintels Drug Company, Boston, Mass.,	72 per cent. of U. S. P. strength.
22612			66 per cent. of U. S. P. strength.
4626–R	Milk,	Harold McIntire, Stoneham, Mass.,	Total solids, 11.54 per cent.; fat, 3.60 per cent.; contained added water.
4678–R	Milk,	Jacob F. Kirchner, Dalton, Mass.,	Total solids, 10.48 per cent.; fat, 3.20 per cent.; contained added water.
4680–R			Total solids, 10.40 per cent.; fat, 3.20 per cent.; contained added water.
4698–R	Milk,	Harry Mindlin, Pittsfield, Mass.,	Total solids, 10.58 per cent.; fat, 3.10 per cent.; contained added water.
4699–S	Milk,	Augustus Schnopt, Hinsdale, Mass.,	Total solids, 11.12 per cent.; fat, 3.40 per cent.; contained added water.
22666	Milk,	J. F. Hanley, Waltham, Mass.,	Total solids, 10.56 per cent.; fat, 2.30 per cent.; contained added water.
22667			Total solids, 10.48 per cent.; fat, 2.30 per cent.; contained added water.
4837–S			Total solids, 11.14 per cent.; fat, 3.40 per cent.; contained added water.
4839–S			Total solids, 11.14 per cent.; fat, 3.40 per cent.; contained added water.
4841–S	Milk,	John L. Dostal, Ludlow, Mass.,	Total solids, 11.14 per cent.; fat, 3.25 per cent.; contained added water.
4843–S			Total solids, 11.18 per cent.; fat, 3.30 per cent.; contained added water.
4845–S			Total solids, 11.06 per cent.; fat, 3.40 per cent.; contained added water.

LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR NOVEMBER, 1913 — *Concluded.*

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
4847–S	Milk,	John L. Dostal, Ludlow, Mass.,	Total solids, 11.14 per cent.; fat, 3.40 per cent.; contained added water.
4849–S			Total solids, 11.64 per cent.; fat, 3.70 per cent.; contained added water.
4851–S			Total solids, 11.36 per cent.; fat, 3.80 per cent.; contained added water.
4853–S			Total solids, 11.30 per cent.; fat, 3.50 per cent.; contained added water.
4855–S			Total solids, 11.54 per cent.; fat, 3.65 per cent.; contained added water.
4857–S			Total solids, 11.40 per cent.; fat, 3.90 per cent.; contained added water.
22736	Milk,	J. R. Howlands, Taunton, Mass.,	Total solids, 11.66 per cent.; fat, 3.80 per cent.; contained added water.
4916–R	Milk,	William Klein, Pittsfield, Mass.,	Total solids, 11.18 per cent.; fat, 3.50 per cent.; contained added water.
4918–R			Total solids, 10.24 per cent.; fat, 2.90 per cent.; contained added water.
22754	Milk,	T. Connelly, Waltham, Mass.,	Total solids, 10.32 per cent., fat, 2.40 per cent.; contained added water.
22755			Total solids, 10.32 per cent.; fat, 2.30 per cent.; contained added water.
22758			Total solids, 10.52 per cent.; fat, 2.40 per cent.; contained added water.
22775			Total solids, 8.62 per cent.; fat, 0.30 per cent.; skimmed, and contained added water.
22776			Total solids, 8.60 per cent.; fat, 0.30 per cent.; skimmed, and contained added water.
22777			Total solids, 5.14 per cent.; fat, 0.30 per cent.; skimmed, and contained added water.
22771	Milk,	W. T. Hardy, Lexington, Mass.,	Total solids, 11.44 per cent.; fat, 3.25 per cent.; contained added water.
22781	Milk,	Ideal Lunch, Springfield, Mass.,	Total solids, 3.18 per cent.; fat, 2.30 per cent.; contained added water.
22785	Milk,	Capitol Lunch, Springfield, Mass.,	Total solids, 11.80 per cent.; fat, 2.60 per cent.; skimmed, not marked.

22800	Milk,	John O. Bicknell, Weymouth, Mass.,	Total solids, 10.46 per cent.; fat, 3.60 per cent.; contained added water.
22801	Milk,	John O. Bicknell, Weymouth, Mass.,	Total solids, 10.17 per cent.; fat, 3.25 per cent.; contained added water.
22802	Milk,	John O. Bicknell, Weymouth, Mass.,	Total solids, 9.06 per cent.; fat, 2.80 per cent.; contained added water.
22803	Milk,	John O. Bicknell, Weymouth, Mass.,	Total solids, 9.10 per cent.; fat, 2.95 per cent.; contained added water.
22804	Milk,	John O. Bicknell, Weymouth, Mass.,	Total solids, 9.08 per cent.; fat, 3.00 per cent.; contained added water.
22836	Milk,	Warren G. Heald, Springfield, Mass.,	Total solids, 9.90 per cent.; fat, 2.20 per cent.; skimmed, not marked.
22837	Milk,	The Spa Lunch, Springfield, Mass.,	Total solids, 10.64 per cent.; fat, 2.90 per cent.; contained added water.
4874–R	Milk,	Willard S. Parker Estate, Chelmsford, Mass.,	Total solids, 11.32 per cent.; fat, 3.40 per cent.; contained added water.

COLD STORAGE.

Chemical Examinations of Samples of Cold-storage Goods for the Months of October and November.

Articles.	Number found to be of Good Quality.	Number found to be Unfit for Food.	Total Number of Samples examined.
Butter,	1	–	1
Chickens,	13	10	23
Duck,	–	1	1
Heart,	–	1	1
Liver,	–	1	1
Squab,	–	2	2
Turkey,	–	1	1
Venison,	3	4	7
Totals,	17	20	37

During the month of November, 1913, the following convictions were secured because goods were held in cold storage longer than twelve calendar months without the consent of the State Board of Health: —

Name of Defendant.	Place.	Result.
Thomas Soracco,	Boston,	Fined $10.
Edwin E. Winkley,	Lynn,	Case filed.

In addition to the above, Charles E. Barrett of Lynn was convicted of secreting goods in his cold-storage warehouse to prevent inspection; case was filed, with payment of costs.

REPORT ON THE PROSECUTIONS CONCERNING SALE OF EGGS TAKEN FROM COLD STORAGE.

(Chapter 538, Acts of 1913.)

During the months of October and November, 1913, the following convictions[1] were secured because the eggs "offered or exposed for sale" were not marked with the words "Cold Storage Eggs," in accordance with the rules and regulations of the State Board of Health: —

No.	Date.	Name of Defendant.	Place.	Result.
1	Oct. 16, 1913	Mohican Company,	Pittsfield,	Case filed.
2	Oct. 16, 1913	New York Cash Grocery,	Pittsfield,	Case filed.
3	Oct. 16, 1913	Mason Egg and Butter Company,	Pittsfield,	Case filed.
4	Oct. 16, 1913	Albany Cash Market,	Pittsfield,	Case filed.
5	Oct. 21, 1913	Walter J. Munger,	Springfield,	Fined.
6	Oct. 21, 1913	Julius F. Carman,	Springfield,	Fined.
7	Oct. 21, 1913	Thomas Tillman,	Springfield,	Fined.
8	Oct. 21, 1913	George C. Hodges,	Springfield,	Fined.
9	Oct. 21, 1913	James Van Dyke Company,	Springfield,	Fined.
10	Oct. 21, 1913	Isidor Tillman,	Springfield,	Fined.
11	Oct. 28, 1913	Charles L. Thrasher,	Springfield,	Fined.
12	Oct. 22, 1913	Michael Smith,	Holyoke,	Fined.
13	Oct. 22, 1913	John Moskal,	Holyoke,	Fined.
14	Oct. 22, 1913	New York Butter House,	Holyoke,	Fined.
15	Oct. 28, 1913	Josiah R. Smith,	Holyoke,	Fined.
16	Oct. 27, 1913	J. Ashman Mansfield,	Worcester,	Fined.
17	Oct. 27, 1913	Sarkis Zarkarian,	Worcester,	Fined.
18	Oct. 27, 1913	William E. Meggett,	Worcester,	Case filed.
19	Oct. 30, 1913	Mae D. Gregory,	Malden,	Case filed.
20	Oct. 30, 1913	Edward W. Hughson, Frank T. Clark,	Malden,	Case filed.
21	Oct. 30, 1913	William H. Donn,	Malden,	Case filed.
22	Oct. 30, 1913	Arthur C. Phillips,	Malden,	Case filed.
23	Oct. 30, 1913	W. H. Pembrook, G. H. Feltrup,	Malden,	Case filed.
24	Oct. 30, 1913	Nicholas Berlo,	South Boston,	Fined.
25	Oct. 30, 1913	William Scott,	South Boston,	Case filed.
26	Oct. 30, 1913	Stanley Welaish,	South Boston,	Case filed.
27	Oct. 30, 1913	Jacob Cohen,	South Boston,	Case filed.
28	Oct. 30, 1913	James Dalzell,	South Boston,	Case filed.
29	Oct. 30, 1913	David Cooper,	South Boston,	Case filed.
30	Oct. 30, 1913	Leonard H. Stevenson,	South Boston,	Case filed.
31	Oct. 30, 1913	Joseph S. Schuver,	South Boston,	Case filed.
32	Oct. 30, 1913	Toni Mucci,	South Boston,	Case filed.
33	Oct. 30, 1913	Abraham Cohen,	South Boston,	Case filed.
34	Oct. 30, 1913	Adam S. Amrhein,	South Boston,	Case filed.
35	Nov. 6, 1913	L. M. Johnson,	Boston,	Fined.
36	Nov. 6, 1913	James Simmons,	Boston,	Fined.
37	Nov. 6, 1913	Lazarus K. Surabian,	Boston,	Fined.
38	Nov. 6, 1913	Joseph Sugarman,	Boston,	Fined.
39	Nov. 6, 1913	C. I. Hutchinson,	Boston,	Fined.
40	Nov. 11, 1913	Patrick J. McManus,	Boston,	Case filed.
41	Nov. 11, 1913	Lewis E. Rose,	Boston,	Fined.
42	Nov. 14, 1913	H. T. Condon,	Lynn,	Case filed.
43	Nov. 14, 1913	Blair Gautreau,	Lynn,	Case filed.
44	Nov. 14, 1913	J. Frederick Hatton,	Lynn,	Case filed.
45	Nov. 14, 1913	James W. M. Harvey,	Lynn,	Case filed.

[1] The convictions for October are republished in this Bulletin, owing to inaccuracies as previously reported in the preceding Bulletin.

No.	Date.	Name of Defendant.	Place.	Result.
46	Nov. 14, 1913	Fred S. Langdon,	Lynn,	Case filed.
47	Nov. 14, 1913	Charles McManus,	Lynn,	Case filed.
48	Nov. 14, 1913	Silas G. Small,	Lynn,	Case filed.
49	Nov. 19, 1913	M. N. Winters,	Lowell,	Case filed.
50	Nov. 19, 1913	Samuel Rostler,	104 Branch St., Lowell,	Case filed.
51	Nov. 19, 1913	Samuel P. Pike,	Lowell,	Case filed.
52	Nov. 19, 1913	William T. Patten,	Lowell,	Case filed.
53	Nov. 19, 1913	Francisco Pinto,	Lowell,	Case filed.
54	Nov. 19, 1913	Arthur Boulais,	Lowell,	Case filed.
55	Nov. 19, 1913	Antonio M. Bettencourt,	Lowell,	Case filed.
56	Nov. 19, 1913	John Reynolds,	Lowell,	Case filed.
57	Nov. 19, 1913	Murdock McKinnon,	Lowell,	Case filed.
58	Nov. 19, 1913	Michael McGlinchey,	Lowell,	Case filed.
59	Nov. 19, 1913	Gabriel Kahan,	Lowell,	Case filed.
60	Nov. 19, 1913	Harry Novinsky,	Lowell,	Case filed.
61	Nov. 19, 1913	Barnet Kaplan,	Lowell,	Case filed.
62	Nov. 19, 1913	Charles H. Wing,	Lowell,	Case filed.
63	Nov. 19, 1913	Edward Strauss,	Lowell,	Case filed.
64	Nov. 19, 1913	Charles P. Hopkins,	Lowell,	Case filed.
65	Nov. 19, 1913	Clement Bairstow,	Lowell,	Case filed.
66	Nov. 21, 1913	Max M. Warshaw,	Lawrence,	Continued for sentence.
67	Nov. 21, 1913	Charles H. Merrill,	Lawrence,	Continued for sentence.
68	Nov. 21, 1913	Charles H. Bossé,	Lawrence,	Continued for sentence.
69	Nov. 21, 1913	Boise Supernant,	Lawrence,	Continued for sentence.
70	Nov. 21, 1913	Frederick Greenleaf,	Lawrence,	Continued for sentence.
71	Nov. 25, 1913	Morris Lifschitz,	Boston,	Fined.
72	Nov. 25, 1913	George A. Vail,	Boston,	Case filed.

Total amount of fines imposed, $210.

SLAUGHTERING AND MEAT INSPECTION.

The following persons were found guilty of slaughtering without the inspector being present: —

Name of Defendant.	Place.	Result.
Henry Shove,	Taunton,	Case filed.
H. A. Lincoln,	Taunton,	Case filed.
H. J. Fredette,	New Bedford,	Fined $25.

REPORT ON INSPECTION OF DAIRIES.

During the month of November, 1913, 199 dairies were examined in the following places: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Danvers,	12	6	50.00	6	50.00
Second inspection,	9	5	55.56	4	44.44
Third inspection,	26	15	57.69	11	42.31
Middleton,	–	–	–	–	–
Third inspection,	9	2	22.22	7	77.78
North Andover,	10	6	60.00	4	40.00
Second inspection,	4	3	75.00	1	25.00
Third inspection,	20	19	95.00	1	5.00
Peabody,	12	2	16.67	10	83.33
Second inspection,	10	8	80.00	2	20.00
Third inspection,	8	3	37.50	5	62.50
Revere,	–	–	–	–	–
Second inspection,	2	1	50.00	1	50.00
Third inspection,	1	–	–	1	100.00
Fourth inspection,	4	1	25.00	3	75.00
Salem,	–	–	–	–	–
Third inspection,	3	3	100.00	–	–
Saugus,	5	2	40.00	3	60.00
Second inspection,	10	9	90.00	1	10.00
Third inspection,	1	1	100.00	–	–
Fourth inspection,	17	8	47.06	9	52.94
Seventh inspection,	1	–	–	1	100.00
Southborough,	–	–	–	–	–
Fourth inspection,	1	1	100.00	–	–
Topsfield,	4	2	50.00	2	50.00
Third inspection,	16	11	68.75	5	31.25
Wakefield,	3	2	66.67	1	33.33
Second inspection,	2	–	–	2	100.00
Third inspection,	8	2	25.00	6	75.00
Fourth inspection,	1	1	100.00	–	–

Total number of dairies examined,	199
Number found to be free from objectionable conditions,	113
Number concerning which letters were sent,	86
Total number of conditions to which attention was called,	232
Percentage of dairies which passed inspection,	56.78

In addition to the above, 74 dairies were visited at which the sale of milk had been discontinued, 3 of which were making butter; also, 16 dairies were reported as producing less than 20 quarts of milk a day.

Included in the total number of dairies visited were 46 which had recently started in the milk-producing business and were inspected for the first time.

The names of the owners of the dairies found to be worthy of commendation follow: —

Danvers.

Class A.

Armstrong, James * †
Endicott, William C.‡ ||
Jacobs, William A.‡ ||
Mead, Peter

Class B.

Baker, Charles ‡
Barrows, Albert T.* †
Connors, Daniel ‡
Creesy, W. A.
Goodale, J. A.
Hayes, W. K.‡
Higgins, J. E.
Hussey, E. C.‡ ||
Ingalls, H. A.‡
Innis Brothers *
Kennedy, Theodore ‡
Learoyd, A. F.‡ ||
Nangle, James ‡
Palmer, Thomas ‡
Pierce, Thomas
Pitman, Emery S.* †
Pope, Guy P.‡ ||
Putnam, J. N. C.‡ ||
Rogers, D. P.* †
Woodbury, Melville ‡
Woodman, William
Zwicker, J. N.‡ ||

Middleton.

Class B.

Cass & Daley ‡
Hutchinson, E. S.‡ ||

North Andover.

Class AA.

Russell, Richard S.* †

Class A.

Burnham, George
French, (Miss) C. A.‡ ||
Gage, (Est. of) Nathaniel ‡
Hayes, W. H.‡ †
Leland, E. F.‡ ||
Poor, James C.‡ ||

Class B.

Barker, Jacob ‡
Barker, John
Boyce, W. C.‡ †
Chadwick, J. G. & Sons ‡
Driscoll, M. J.
Farnum, B. W.‡ †
Fortin, Frank
Foster, J. Frank ‡
Foster, Nathan ‡
Foster, Orrin N. & Son ‡
Frost, Charles G.‡
Fuller, (Est. of) A. P.‡
Glennie, James * †
Moody, E. W.‡ †
Newhall, Charles A.‡ ||
Rea, Calvin ‡ ||
Rea, (Est. of) George ‡
Robinson, A. M.
Sadler, Gilbert S.
Tucker, E. R.* †
Whittier, H. M.‡

Peabody.

Class A.

Rogers, (Mrs.) J. C.* †
Smith, J. N.* †

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
|| Reported favorably on all previous inspections.

Class B.

Bell, Pierce *
Berry, William T.‡ ||
Carten, John L.
Cummings, Daniel E.*
Dooling, Eugene
Harrigan, D. F.*
King, George H.* †
Raum, J. A.*
Saunders, Charles ‡ ||
"Town Farm" * †
Trask, J. A.‡ ||

Revere.

Class B.

Clark, Patrick §
Cowhig, John J.*

Salem.

Class B.

McShay, G. B.‡
Sands, E. L.‡
Scranton, S.‡

Saugus.

Class A.

Bennett, Frank P.§ ||
McCullough Brothers
"Town Farm" §

Class B.

Berthold, Conrad * †
Chisholm, T. C.* †
Dearden, (Miss) Harriet §
Evans, C. F.*
Fisk, A. G.
Fiske, Frank E.§
Goodrich, William H.* †
Hatch, Anthony §
Howard, (Miss) E. J.* †
Longfellow, Ernest §
McTeague, Terrence ‡
Nicholson, George F.* †
Penny Brothers * †
Pyrah, George §
Stillings, C. E.§
Stocker, A. M.*
Townsend, John *

Southborough.

Class A.

Leland, Charles F.§ ||

Topsfield.

Class A.

Pierce, T. W.‡ ||

Class B.

Clark, D. S.‡
Dow, Nathan
Dunley, Henry
Ferguson, E. E.‡
Jordan, C. F.‡ ||
Lamson, (Est. of) J. A.‡ ||
McLeod, Norman ‡
Merideth, J. M.‡ ||
Peabody, C. J.‡
Rust, F. W.‡ ||
Tilton Brothers ‡
Towne, Frank H.‡

Wakefield.

Class B.

Dow, George §
Learned, F. E.
Lyons, Dennis
Paon, Thomas ‡
"Town Farm" ‡ ||

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.
|| Reported favorably on all previous inspections.

NOTES ON PELLAGRA IN MASSACHUSETTS, WITH REPORT OF TWO CASES IN DANVERS STATE HOSPITAL.[1]

By J. B. MacDonald, M.D., Hathorne, Mass., Assistant Superintendent, Danvers State Hospital.

Until within quite recent years the existence of pellagra in Massachusetts has been practically unknown. Medical men rarely met with cases where the question of this disease could be raised. In the few instances where lesions and symptoms might suggest pellagra, the conditions presented features admitting different etiological solutions. Generally in such cases a complex of physical, neurological and mental symptoms existed, more or less characteristic of various organic nervous disorders, and the pellagroid manifestations were, with more or less sufficient reason, interpreted as occurrences in these diseases, trophic disorders, etc. Our medical teaching led the majority of us to disregard the disease in our practice and studies as one peculiar to foreign countries. Few knew much more than that about it. Under the circumstances a mistake or failure to recognize a case can be regarded as only natural. At this day it is hard to say to what extent New England's long-asserted freedom from the disease depended upon failure of diagnosis.

The same is true of other States where to-day the prevalence of pellagra assumes the proportions of a most serious problem. Babcock states he should have made the diagnosis of pellagra in South Carolina nearly twenty-one years ago. The disease was first recognized in that State in 1889, and the enormous increase in the number of cases reported since that time — in 1911 a conservative enumeration of pellagrins in the State institutions bringing the total up to 500 — lends a peculiar significance to his statement. In Illinois, where the disease was first recognized in 1909, over 500 cases in State institutions were reported in that and the succeeding two years. In New England, Rhode Island, announcing the death of the first case of pellagra in the State in 1911, reports a total of 38 cases in its State institutions, some of whom were admitted with well-marked lesions of the disease. Evidence is not lacking that the disease existed in this country in the early 60's, that it was at least in part responsible for the mortality in the Andersonville prison during the civil war, and that "cases of pellagra, native and imported, have probably occurred in general practice and especially in asylums and hospitals in this country for the

[1] Danvers State Hospital Contribution No. 41, Series 1913. Reprinted from The Boston Medical and Surgical Journal, Vol. clxix., No. 16, pp. 567–571, Oct. 16, 1913.

last half century, although the diagnosis may not always have been correctly made" (Babcock).

In Massachusetts, at all events, though the first of the States to report a case of the disease, it would seem the clinical picture in any succeeding ones was not sufficiently clear to cause serious consideration of the possibility of a pellagrous origin. If cases did occur it must have been at rare and scattered intervals. It is reasonable to assume that if pellagra existed in this State it never attained to anything like epidemic or even endemic proportions. In the forty-eight years subsequent to 1862, medical literature does not contain reference to a single case of pellagra in Massachusetts; and the striking characteristics of this disease, had it prevailed to any great extent, could scarcely fail of recognition, notwithstanding a sense of security and immunity founded upon medical tradition and a belief in the nonexistence of predisposing and exciting agencies under such geographic climatic and social conditions as ours. At the same time it must be borne in mind that in these States, where the disease is now known to prevail extensively, older physicians are able to recall many cases which failed of diagnosis in the past, and which in the light of their present knowledge and experience they would not hesitate to call pellagra.

The first case of pellagra in Massachusetts of which we have record was reported by Tyler in 1862. Nothing further was heard of the disease in this State, either in institutions or general practice, for almost fifty years.

The studies and investigations of Searcey of Alabama, and of Merrill and Babcock of South Carolina in 1907, showing conclusively that it had existed sporadically in certain South Atlantic and Gulf Coast States for years, and that more recently it had made its first appearance in epidemic form in widely distant sections of the country, awakened an interest which has developed to a point of anxious concern with the enormous increase in the number of pellagrins reported since 1907 (estimates in 1911 running from 10,000 to 100,000 or more for the United States). Following closely upon the discovery of pellagra in the south, reports from sections where the disease was hitherto not recognized began to multiply, and in this connection it is interesting to note that since 1907 every one of our New England States has reported one or more cases.

In 1910 Fitzgerald (Worcester) reported the second case on record in Massachusetts. In 1911 Dean reported a case in the Northampton State Hospital following this in 1912 with a report of a case in the Northampton almshouse, and of two in the State hospital. Lee reported a case from the Massachusetts General Hospital in 1912,

and Adler in 1913 mentions 3 (unpublished) cases seen during the previous two years at Danvers and Boston State hospitals, a total of 10 recognized cases, all of which, with one exception, occurred since since 1910. The diagnosis in most of these was accepted by expert authority, and the subsequent course of each case was confirmatory of the diagnosis. There can no longer remain a question regarding the existence of the disease in our State, — a sporadic existence, if you will, but yet such as it maintained for some years in other States where now its victims are numbered by hundreds.

It is quite possible that the number of cases reported represents but a part, perhaps a small part, of the total number in the State. Students of the disease in other States remark upon the frequency with which cases failed of recognition in the earlier years, and even at the present time, when it seems hardly possible that the majority of physicians have not become acquainted with its prevalence and very striking and obvious characteristics. Institution men in States where pellagra prevails — and the widest publicity has been given the disease in the lay and medical press — not infrequently receive pellagrous patients in whom the condition had gone unrecognized or under mistaken diagnosis. A superintendent in a southern hospital for the insane is cited as stating that cases in his institution have been erroneously diagnosed as trophic disorders in general paralysis, etc., in years gone by. From Rhode Island, perhaps the most important focus of the disease in New England, Cohoon reports well-marked cases received at the State institution in whom the condition had not previously been suspected, and he is of the opinion that pellagra is far more common in the community at large than the reports would indicate. Recently the writer has read a very clear description of a case in the records of the New Hampshire State Hospital,[1] the condition, however, failing of recognition, it occurring at the time when the disease meant little more than the shadow of a name to physicians in that State.

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[1] To the writer's recollection 3 cases occurred at the New Hampshire State Hospital during his period of service between 1907 and 1911. Raynaud's disease was considered in 1 case. Another appeared like an atypical case of general paralysis. In at least one case pellagra was considered a possibility. Within a month of the present time a patient died in that hospital in whom the disease has been recognized, and the cause of death given as pellagra. A note descriptive of one case appearing on the records of that institution is sufficiently interesting to justify its quotation here:

"Patient shows what appears like an eczema of the hands, supposedly due to her habit of frequently immersing them in water. But the course of the trouble is not like that in eczema. The skin first became somewhat chafed and inflamed, then black as if gangrenous, finally sloughing off, leaving a raw surface. Both hands are in this condition, the affection extending upward to about 2 inches above the wrist joint. The elbows present similar lesions, and there is a beginning hardening and blackening of the skin over the knees. The mucous membranes are also similarly affected, the mouth being in very bad condition, so that the patient is unable to swallow. The rectum is also involved, rendering rectal feeding impossible. The vulva and vaginal mucosa show similar involvement." — New Hampshire State Hospital records, Aug. 30, 1911.

During the present year two cases occurred at the Danvers State Hospital. Neither case was recognized prior to admission. One presented on admission a typical picture of typhus pellagrosus, a condition described by Lavinder as "an acute explosion peculiar to pellagra and occurring as an incident in the chronic course of the disease," and by Edward Jenner Woods as "a terminal phase, an acute exacerbation of the usual chronic condition." The other case developed the characteristic skin lesions after a residence of two months, but the history is strongly suggestive of previous attacks of the disease. In the one case the cutaneous lesions had been variously described as eczema, psoriasis, "vagrant's disease," dermatitis, etc., while the existing stomatitis, gastrointestinal nervous and mental disorders obtained different interpretations. In the other, the history received contained nothing suggestive of pellagra. With the appearance of the skin lesions a fuller investigation revealed a long-standing condition of gastrointestinal disturbances coincident with mental depression and confusion. The obscure nervous disturbances said to have existed in this case, the depressive mental state with the added digestive disorders, form not uncommonly the earliest manifestations of the disease. Indeed, instances are not rare where the mental and gastrointestinal symptoms have existed for years before the skin lesions claimed attention, — the so-called pellagra-sine-pellagra, in which the cutaneous eruptions are so insignificant and of so short a duration as to escape notice or excite no serious consideration from the sufferer or the medical attendant.

A brief account of these cases, while containing nothing relating to pellagra that is not already known, may be of interest and perchance of value in directing attention to a disease the existence of which in our State is still by many questioned.

Case 1. — Admitted April 9, 1913. I. L. G. White, female, housewife, thirty-six years of age at time of death. One brother neuropathic. One sister had attack of chorea at age of eight; recovered. Father died aged sixty-one; cause of death said to be locomotor ataxia. Patient's early history uneventful; development normal; married at twenty-two; three children living, one dead, three miscarriages. For ten years took drugs to bring about abortions. During early life very neat and tidy; during last ten or twelve years very slack and careless of her person and appearance. Home conditions very poor; surroundings unsanitary. Used mainly baker's bread since marriage; seldom cooked; used canned goods extensively. Three years ago showed marked change of disposition; had periods of despondency; appeared dull and disinterested; suffered from indigestion and diarrhœa; occasional faint spells. Following birth of a child during that period had delusions about her husband; thought he was planning to kill her, and would not take medicine prescribed by physician, fearing poison. From

this time on suffered greatly from "faint feelings" and other peculiar gastric and intestinal sensations and intermittent attacks of diarrhœa. Seemed worse in winter, improving somewhat with advent of summer. Seven or eight months before admission began to complain of a heavy feeling in her head; said it seemed at times as if a veil was over her eyes; often would brush and pick at face on this account. An eruption thought to be eczema began on the back of the hands around the knuckles. It spread slowly, involving the dorsal surfaces between the first phalanges and midway between the metacarpophalangeal and wrist joints. Eruption was symmetrical and of a dark reddish color. No discharge, no itching, but at times a burning sensation in parts involved. With appearance of eruption gastrointestinal disorders became more marked, and at Christmas diarrhœa became very troublesome. At same time glossitis developed, accompanied by increased salivation, and expectoration of much frothy material. She lost weight. She complained a great deal of weakness of the legs, and of pain in the occipital region, extending downward into the cervical spine. Gait became unsteady and she frequently stumbled over objects in her way. Later, the act of walking became almost impossible, as the motions seemed to give rise to retraction of the head and increased pain. The eruption had by this time extended upward to the wrist, which it encircled, and downward on the dorsa of the fingers to the distal joints. Cramps of the extremities and paroxysmal tonic contractions occurred, resembling tetany and causing the head to be drawn backward on the slightest stimulus. Mental attitude one of depression and confusion, with hallucinations of sight, ideas of persecution and tendency to suicide. Became extremely restless and noisy, complained of burning sensations; screamed fire and called for help. Showed marked speech defect; attempted to cut her throat and that of youngest child.

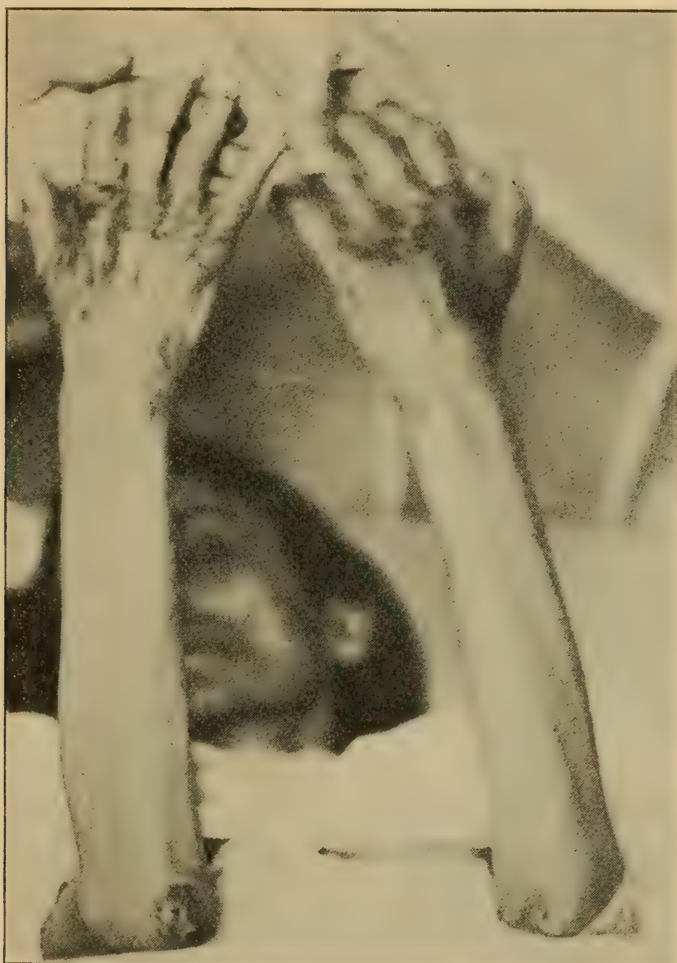
On admission very restless and confused. General muscular twitchings and frequent spasmodic retraction of head noted. Tactile hyperesthesia extreme. Jactatoid movements of both upper and lower extremities. Knee jerks increased to point of clonic contractions. Right ankle clonus. No Babinski or Kernig. Extensor spasms, finally so severe as to cause opisthotonos, lasting fifteen or twenty seconds and induced by touch or loud noise.

Nutrition poor, musculature atrophied, complexion sallow. Tongue deep red, raw and beefy looking. On both hands and arms a perfectly symmetrical erythema extending from distal phalanges almost to elbows, and encircling the wrists, forming a well-defined cuff; eruption dry, exfoliating, dark reddish in color, the line of demarkation between it and unaffected skin well defined by a deeper colored border. Palmer surfaces free from eruption, also ends of fingers. Pigmentation and scaling most marked on extensor surfaces. Deep fissures existed over the joints of the fingers, skin of legs and thighs roughened and dry, but without pigmentation.

Urine was negative, except for the presence of considerable indican. Blood negative. Wassermann negative.

Consciousness was profoundly clouded at time of admission. On the third day the patient was in a semi-comatose state and on the eighth day after admission death occurred. Autopsy not permitted.

Case 2. — Admitted Jan. 27, 1913. C. M. O., white, female, housewife, age forty-six. Married. Paternal grandmother died at sixty-six of cerebral hemorrhage. Father addicted to opium habit for years; died at sixty of "spinal meningitis." Mother died of cancer of the liver. One sister subject to fainting spells or "fits." At the age of fifteen patient had period of great religious excitement, with hysterical manifestations. Has five children. Nervous disturbances developing with pregnancies, morbid notions, ideas of persecution, etc. For several years took acetanilid for headaches, and in later years developed an opium habit from

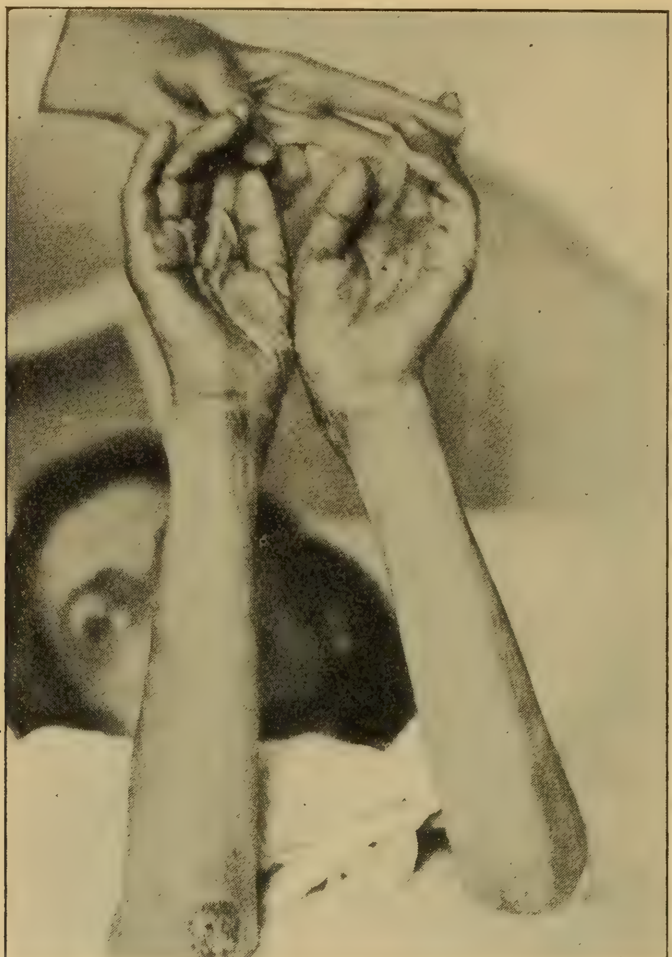


Case 2. — Showing the lesions on elbows and backs of hands. Note symmetry, the fissures and excoriations, the well-defined line of demarkation from healthy skin. At the present time in this case desquamation is complete, the appearance of the affected areas is pinkish, and the mental condition shows a slight improvement.

long-continued taking of Squibb's diarrhœa mixture and paregoric. About 1st of January became depressed, worried a great deal, had crying spells, felt weak and incapable of attending to household work. Delusions of poisoning. Finally passed into a manic state, showing extreme restlessness and disordered conduct.

In the hospital she continued restless, overactive, confused, disoriented and

hallucinated. From the first there was some evidence of salivary hypersecretion. She expectorated a great deal, and at times said she had worms in her mouth. Habits very untidy. From time of admission she had spells of diarrhœa. About the 1st of April attention was drawn to an erythematous condition of the backs of her hands. This presented the appearance of a dermatitis somewhat like that seen in a bad sunburn, with scattered blebs containing a serous fluid. The color of these areas was dark red, the border defining them from the normal skin of a darker shade. The erythema involved the dorsal surface of each hand, ex-



Case 2. — Showing the dull and apathetic facies, emaciations, symmetrical lesions on anterior surface of wrists, "the cuff" and the lesions on elbows.

tended downward over the dorsa of the fingers to the last joints and encircled the wrists. The lesions were perfectly symmetrical in size, shape and location. Symmetrical patches of a like character were present on the dorsal surfaces of the elbow joints, and a small area of a dry exfoliating erythema existed at each corner of the mouth. Symmetrical patches of a milder dermatitis and lighter pigmentation were present over the acromial processes. The tongue was swollen, showing indentations from the teeth, the mucous membrane of mouth and tongue red-

dened and inflamed, and examination showed a similar condition of the vaginal mucous membrane.

The skin lesions when first observed resembled dermatitis. A few blebs and considerable swelling existed. Later, fissures formed over the knuckles and finger joints and on the anterior surface of the wrist in the "cuff." The color deepened to a copper hue. The tongue lost its epithelium, becoming beefy looking, and the skin of the affected areas exfoliated from center to periphery. This process is practically completed at the present time, the new skin appearing of a delicate pinkish hue, the line of demarkation from the unaffected skin remaining of a distinctly darker shade. Before exfoliation was completed, the palms of the hands showed a slight involvement, and here also the epidermis is exfoliating. A suggestion of the "pellagrous collar" was given at one time by the appearance of some exfoliation of the skin on the anterior surface of the neck. Throughout the course of the eruption the resemblance of the erythema to a glove covering the back of the hands was striking.

The patient, while now appearing stronger and brighter mentally, is quite emaciated. The skin of the face and rest of the body has a dull leaden hue. Diarrhœa, most severe at the height of the skin and intestinal trouble, occurs occasionally. Stools have been throughout of very offensive odor. Examination for amœbæ gave negative results. Von Pirquet tuberculin test was negative. Blood examination showed no important changes, except a mild degree of secondary anemia. Blood serum gave a negative reaction to the Wassermann test for syphilis. The reflexes are diminished; knee jerks almost abolished. No Kernig or Babinski. Pupillary response normal to light and accommodation.

The mental state at first showed marked confusion, disorientation and clouded consciousness. The clinical picture was that of a mixed manic excitement. Coincident with the improvement of the skin and gastrointestinal disorders the excitement abated, consciousness became clearer, orientation partly returned, and the patient seemed to gain some insight, expressing curiosity regarding the condition of her hands, and asking the physicians at times if there was any chance for her recovery, — a change remarkable enough to lead to a question regarding the relation of the eruption to her excitement and confusion. In all probability one or more recurrent attacks will occur.

One of these patients was a native of Massachusetts, where she and her people had always lived. The other was born in West Virginia, but had lived for ten to twelve years in Massachusetts prior to the onset of her psychosis. Pellagra had never occurred in either family so far as their histories could be traced. Each of the families from which these cases came lived under conditions of poverty. In one, the sanitary conditions of the home were found to to be very bad. In each case malnutrition from want and insufficient and improper nourishment seemed to be a factor. Maize did not enter to any great extent into the dietary in either case; baker's bread and canned foods seemed to figure largely in it. Each patient

was addicted to a drug habit, but the nature of the drugs used in one case points to gastric and intestinal disturbances as the source of the habit. In each case a neuropathic heredity existed. In one, there can be no doubt that the disease existed for some time before her admission to the hospital; in the other, repeated attacks are suggested by the history. In either case the mental, physical and neurological changes may be ascribed, in large part or entirely, to an intoxication of the nervous system by the disease, a result not at all uncommon according to competent authorities on pellagra. Most important considerations of all are the evident failure to recognize the disease at its beginning, or even in its terminal stage (as in Case 1), implying that cases in the community may not infrequently escape detection; and the tendency to spread widely and rapidly, as shown by the reports from States where but a few years ago pellagra was unknown.

CONTAMINATED VEGETABLES.[1] THE USE OF NIGHT SOIL IN THE VEGETABLE GARDEN AS A POSSIBLE DISSEMINATOR OF DISEASE.

By J. D. Long, Surgeon, United States Public Health Service.

It is customary in investigations to discover the causes operative in the production of outbreaks of typhoid fever; to inquire, among other things, as to whether persons who have been attacked by the disease have used fresh or uncooked vegetables as part of their diet during the two or three weeks prior to the onset of the disease.

The reason for making such inquiry is that in some localities vegetable gardens have been handled in such an insanitary manner that they have become a danger to the community, not only for the reason that typhoid fever can be spread through the agency of vegetables, but because other serious diseases, such as amœbic dysentery and bacillary dysentery, may be transmitted in the same manner.

It has been the custom in the Orient, for no one knows how many years, to use night soil as a fertilizer in vegetable gardens. In fact, the practice is so common that there is a regularly established traffic in this commodity, and owners and operators of vegetable gardens, in addition to carefully saving the excrement of themselves, their families and laborers, make periodical trips to the nearest market for the purpose of purchasing such additional material as may be

[1] Reprinted from the United States Public Health Reports, March 28, 1913.

needed. An understanding of this custom will make plain the reason why disease, due to practices of this kind, is common in oriental countries.

The method of using the material varies in different localities. The practice is first to mix a certain amount with the soil at or near the time of planting the seed; then at later periods, when the vegetables are growing, to sprinkle a thin solution of night soil from a sprinkling can over the growing vegetables. In certain portions of the Orient it is a common thing to see a laborer walking between rows of young vegetables with a bamboo pole over his shoulder from each end of which there hangs a sprinkling can. The streams from these cans are carefully directed onto the tops of the young vegetables, and two rows can thus be treated at one time.

In certain portions of the United States it is not uncommon to use sewage as it issues from the sewerage system of cities or towns for irrigation purposes, either by diverting it into a channel which leads through the garden, or by dipping it from polluted streams, vaults or vats, and applying it. In several communities owners of large vegetable gardens collect night soil, and furnish, clean and change the pails or receptacles free of charge to the householder. In these instances the matter collected is usually mixed with the earth of the garden.

It has been found that vegetables grown in soil infected with the germ of typhoid fever had the germs of the disease upon the leaves and stems thirty-one days after the soil was infected, and the same germ was found in the ground itself thirty-five days after it was infected. Rainfall and sunlight did not kill or remove the germs.

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RETURNS OF DISEASES.

Cases of Diseases declared by the State Board of Health to be Dangerous to the Public Health.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

DISEASE.	Week ending — Dec. 6.	Dec. 13.	Dec. 20.	Dec. 27.	Total.
Diphtheria,	169	195	196	177	737
Measles,	83	92	111	95	381
Scarlet fever,	226	274	240	248	988
Typhoid fever,	24	37	27	20	108
Tuberculosis, pulmonary (or not classified),	114	204	125	100	543
Tuberculous meningitis,	3	1	4	2	10
Tuberculosis, other forms,	5	7	6	4	22
Cerebro-spinal meningitis,	6	5	6	1	18
Whooping cough,	68	83	79	54	284
Varicella,	140	102	109	81	432
Ophthalmia neonatorum,	28	48	57	51	184
Anterior poliomyelitis,	9	3	2	5	19
Smallpox,	3	–	–	–	3
Trachoma,	–	3	1	1	5
Tetanus,	–	1	1	–	2
Malignant pustule,	–	1	–	–	1
Glanders,	–	–	1	–	1
Actinomycosis,	–	–	–	1	1

Cases of Infectious Diseases not included in the Above Table.

[Cases not notifiable under the provisions of section 52 of chapter 75 of the Revised Laws.]

DISEASE.	Week ending — Dec. 6.	Dec. 13.	Dec. 20.	Dec. 27.	Total.
Mumps,	5	5	6	5	21
Erysipelas,	–	1	1	1	3
Pellagra,	–	–	–	1	1

RETURNS OF DEATHS.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Cities and Towns of More than 10,000 Population.

[Under the provisions of chapter 210, Acts of 1913.]

Week ending Dec. 6, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	18[1]	11[1]	2[1]	–	1[1]	1[1]	2[1]	–	–	1[1]
		20[2]	11[2]	2[2]	1[2]	1[2]	1[2]	3[2]	–	–	1[2]
Worcester,	145,986	–	–	–	–	–	–	–	–	–	–
Fall River,	119,295	4	4	–	–	–	–	–	–	–	–
Lowell,	106,294	4	2	–	–	2	–	–	–	–	–
Cambridge,	104,839	5	4	–	–	–	–	–	–	1	–
New Bedford,	96,652	5	3	1	–	1	–	–	–	–	–
Lynn,	89,336	4	2	–	–	2	–	–	–	–	–
Springfield,	88,926	1	–	–	–	–	1	–	–	–	–
Lawrence,	85,892	2	1	1	–	–	–	–	–	–	–
Somerville,	77,236	3	1	–	1	–	1	–	–	–	–
Holyoke,	57,730	1	–	–	–	1	–	–	–	–	–
Brockton,	56,878	–	–	–	–	–	–	–	–	–	–
Malden,	44,404	1	–	–	–	–	1	–	–	–	–
Haverhill,	44,115	1	–	–	1	–	–	–	–	–	–
Salem,	43,697	2	1	1	–	–	–	–	–	–	–
Newton,	39,806	1	1	–	–	–	–	–	–	–	–
Fitchburg,	37,826	–	–	–	–	–	–	–	–	–	–
Taunton,	34,259	–	–	–	–	–	–	–	–	–	–
Everett,	33,484	2	1	1	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	2	1	–	–	–	1	–	–	–	–
Pittsfield,	32,121	–	–	–	–	–	–	–	–	–	–
Waltham,	27,834	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	–	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	1	1	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	2	–	–	–	2	–	–	–	–	–
Northampton,	19,431	1	1	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	–	–	–	–	–	–	–	–	–	–
Peabody,	15,721	1	–	–	–	–	–	–	–	1	–
Melrose,	15,715	1	1	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	1	–	–	–	–	–	–	–	–
Gardner,	14,699	1	–	–	1	–	–	–	–	–	–
Marlborough,	14,579	2	2	–	–	–	–	–	–	–	–
Clinton,	13,075	1	1	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	2	1	–	–	–	1	–	–	–	–
Framingham,	12,948	1	1	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	1	–	–	–	–	–	1	–	–	–
Wakefield,	11,404	1	–	1	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	1	–	–	–	–	1	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,964,089	75	41	7	4	9	7	4	–	2	1

[1] Nonresidents deducted. [2] Total deaths.

Week ending Dec. 13, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	24[1] 26[2]	18[1] 20[2]	– –	2[1] 2[2]	2[1] 2[2]	– –	1[1] 1[2]	– –	1[1] 1[2]	– –
Worcester,	145,986	–	–	–	–	–	–	–	–	–	–
Fall River,	119,295	7	4	–	2	–	–	–	–	1	–
Lowell,	106,294	3	1	–	1	1	–	–	–	–	–
Cambridge,	104,839	6	4	1	–	–	–	–	–	1	–
New Bedford,	96,652	5	2	–	–	–	1	–	–	–	2
Lynn,	89,336	–	–	–	–	–	–	–	–	–	–
Springfield,	88,926	3	2	–	–	1	–	–	–	–	–
Lawrence,	85,892	2	1	–	1	–	–	–	–	–	–
Somerville,	77,236	1	–	–	–	1	–	–	–	–	–
Holyoke,	57,730	3	1	–	–	2	–	–	–	–	–
Brockton,	56,878	2	2	–	–	–	–	–	–	–	–
Malden,	44,404	1	–	–	–	1	–	–	–	–	–
Haverhill,	44,115	–	–	–	–	–	–	–	–	–	–
Salem,	43,697	1	1	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	2	1	–	–	–	1	–	–	–	–
Taunton,	34,259	1	–	–	–	1	–	–	–	–	–
Everett,	33,484	1	1	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	–	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	–	–	–	–	–	–	–	–	–	–
Waltham,	27,834	1	–	–	–	–	–	1	–	–	–
Brookline,	27,792	1	1	–	–	–	–	–	–	–	–
Chicopee,	25,401	–	–	–	–	–	–	–	–	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	2	2	–	–	–	–	–	–	–	–
North Adams,	22,019	1	–	–	–	1	–	–	–	–	–
Northampton,	19,431	2	2	–	–	–	–	–	–	–	–
Beverly,	18,650	1	1	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	2	2	–	–	–	–	–	–	–	–
Westfield,	16,044	–	–	–	–	–	–	–	–	–	–
Peabody,	15,721	1	1	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	1	1	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	1	–	–	–	–	1	–	–	–	–
Framingham,	12,948	1	–	1	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	–	–	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,885,239	78	50	2	6	10	3	2	–	3	2

[1] Nonresidents deducted. [2] Total deaths.

Week ending Dec. 20, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	38[3]	23[1]	4[1]	1[1]	1[1]	–	4[1]	–	–	3[1]
		40[4]	25[2]	4[2]	1[2]	1[2]	–	4[2]	–	–	3[2]
Worcester,	145,986	–	–	–	–	–	–	–	–	–	–
Fall River,	119,295	3	3	–	–	–	1	–	–	–	–
Lowell,	106,294	5	1	–	–	2	–	–	–	–	1
Cambridge,	104,839	4	4	–	–	–	–	–	–	–	–
New Bedford,	96,652	3	1	–	–	1	–	1	–	–	–
Lynn,	89,336	2	2	–	–	–	–	–	–	–	–
Springfield,	88,926	1	–	–	1	–	–	–	–	–	–
Lawrence,	85,892	4	4	–	–	–	–	–	–	–	–
Somerville,	77,236	2	1	–	1	–	–	–	–	–	–
Holyoke,	57,730	2	–	1	–	1	–	–	–	–	–
Brockton,	56,878	1	–	–	–	–	–	–	–	1	–
Malden,	44,404	2	1	–	–	–	1	–	–	–	–
Haverhill,	44,115	2	–	1	1	–	–	–	–	–	–
Salem,	43,697	–	–	–	–	–	–	–	–	–	–
Newton,	39,806	2	2	–	–	–	–	–	–	–	–
Fitchburg,	37,826	–	–	–	–	–	–	–	–	–	–
Taunton,	34,259	5	4	–	–	–	–	–	–	1	–
Everett,	33,484	1	1	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	–	–	–	–	–	–	–	–	–	–
Pittsfield,	32,121	1	1	–	–	–	–	–	–	–	–
Waltham,	27,834	–	–	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	3	–	–	–	1	–	–	2	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	–	–	–	–	–	–	–	–	–	–
North Adams,	22,019	–	–	–	–	–	–	–	–	–	–
Northampton,	19,431	1	1	–	–	–	–	–	–	–	–
Beverly,	18,650	1	–	–	–	–	1	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	3	1	–	–	2	–	–	–	–	–
Attleborough,	16,215	–	–	–	–	–	–	–	–	–	–
Westfield,	16,044	–	–	–	–	–	–	–	–	–	–
		3[2]	3[2]	–	–	–	–	–	–	–	–
Peabody,	15,721	–	–	–	–	–	–	–	–	–	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	1	1	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	–	–	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	1	–	–	–	–	–	1	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	1	1	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,930,236	94	57	6	4	8	3	6	2	2	4

[1] Nonresidents deducted.

[2] Total deaths.

[3] Nonresidents deducted: one death from anterior poliomyelitis; one death from malignant pustule.

[4] Total deaths: one death from anterior poliomyelitis; one death from malignant pustule.

Week ending Dec. 27, 1913.

CITIES AND TOWNS.	Population. Census for 1910.	Total Number reported.	Tuberculosis, Pulmonary (or not classified).	Tuberculous Meningitis.	Tuberculosis, Other Forms.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	Cerebro-spinal Meningitis.
Boston,	686,092	28[1] 34[3]	19[1] 21[2]	3[1] 3[2]	1[1] 3[2]	4[1] 4[2]	1[1] 1[2]	– –	– 1[2]	– –	– –
Worcester,	145,986	–	–	–	–	–	–	–	–	–	–
Fall River,	119,295	1	1	–	–	–	–	–	–	–	–
Lowell,	106,294	3	2	–	–	–	1	–	–	–	–
Cambridge,	104,839	6	4	–	–	2	–	–	–	–	–
New Bedford,	96,652	2	–	1	–	1	–	–	–	–	–
Lynn,	89,336	7	1	1	–	2	1	1	–	–	1
Springfield,	88,926	5	3	–	–	1	1	–	–	–	–
Lawrence,	85,892	1	1	–	–	–	–	–	–	–	–
Somerville,	77,236	2	1	–	–	1	–	–	–	–	–
Holyoke,	57,730	2	–	2	–	–	–	–	–	–	–
Brockton,	56,878	3	1	–	–	1	–	–	–	1	–
Malden,	44,404	–	–	–	–	–	–	–	–	–	–
Haverhill,	44,115	–	–	–	–	–	–	–	–	–	–
Salem,	43,697	1	1	–	–	–	–	–	–	–	–
Newton,	39,806	–	–	–	–	–	–	–	–	–	–
Fitchburg,	37,826	2	2	–	–	–	–	–	–	–	–
Taunton,	34,259	1	1	–	–	–	–	–	–	–	–
Everett,	33,484	1	1	–	–	–	–	–	–	–	–
Quincy,	32,642	–	–	–	–	–	–	–	–	–	–
Chelsea,	32,452	3	2	–	–	1	–	–	–	–	–
Pittsfield,	32,121	1	–	–	–	–	–	1	–	–	–
Waltham,	27,834	1	1	–	–	–	–	–	–	–	–
Brookline,	27,792	–	–	–	–	–	–	–	–	–	–
Chicopee,	25,401	2	–	1	–	–	–	–	1	–	–
Gloucester,	24,398	–	–	–	–	–	–	–	–	–	–
Medford,	23,150	1	1	–	–	–	–	–	–	–	–
North Adams,	22,019	1	1	–	–	–	–	–	–	–	–
Northampton,	19,431	1	1	–	–	–	–	–	–	–	–
Beverly,	18,650	–	–	–	–	–	–	–	–	–	–
Revere,	18,219	–	–	–	–	–	–	–	–	–	–
Leominster,	17,580	–	–	–	–	–	–	–	–	–	–
Attleborough,	16,215	2	2	–	–	–	–	–	–	–	–
Westfield,	16,044	1[1] 4[4]	– 3[2]	– –	– –	– –	– –	– –	– –	– –	– –
Peabody,	15,721	1	–	–	–	–	–	–	–	1	–
Melrose,	15,715	–	–	–	–	–	–	–	–	–	–
Woburn,	15,308	–	–	–	–	–	–	–	–	–	–
Newburyport,	14,949	–	–	–	–	–	–	–	–	–	–
Gardner,	14,699	–	–	–	–	–	–	–	–	–	–
Marlborough,	14,579	–	–	–	–	–	–	–	–	–	–
Clinton,	13,075	–	–	–	–	–	–	–	–	–	–
Milford,	13,055	–	–	–	–	–	–	–	–	–	–
Adams,	13,026	1	1	–	–	–	–	–	–	–	–
Framingham,	12,948	–	–	–	–	–	–	–	–	–	–
Weymouth,	12,895	–	–	–	–	–	–	–	–	–	–
Watertown,	12,875	–	–	–	–	–	–	–	–	–	–
Southbridge,	12,592	–	–	–	–	–	–	–	–	–	–
Plymouth,	12,141	–	–	–	–	–	–	–	–	–	–
Webster,	11,509	–	–	–	–	–	–	–	–	–	–
Methuen,	11,448	–	–	–	–	–	–	–	–	–	–
Wakefield,	11,404	–	–	–	–	–	–	–	–	–	–
Arlington,	11,187	1	1	–	–	–	–	–	–	–	–
Greenfield,	10,427	–	–	–	–	–	–	–	–	–	–
Winthrop,	10,132	–	–	–	–	–	–	–	–	–	–
Total of reporting towns,	1,973,037	90	53	8	3	13	4	2	2	2	1

[1] Nonresidents deducted.

[2] Total deaths.

[3] Total deaths: one death from actinomycosis.

[4] Total deaths: one death from anterior poliomyelitis.

Deaths from Diseases declared by the State Board of Health to be Dangerous to the Public Health in Towns of Less than 10,000 Population.

[Under the provisions of chapter 210, Acts of 1913.]

DISEASE.	Place.	Week ending — Dec. 6.	Dec. 13.	Dec. 20.	Dec. 27.
Tuberculosis, pulmonary (or not classified).	Barnstable,	–	–	1	–
	Bridgewater,	–	–	–	1
	Dracut,	–	1	1	–
	Hadley,	–	–	1	–
	Ipswich,	1	–	–	–
	Lancaster,	1	–	1	–
	Longmeadow,	1	–	–	–
	Lunenburg,	–	–	–	1
	Maynard,	–	1	–	–
	Montague,	–	1	–	–
	North Andover,	–	–	–	1
	Wellesley,	–	–	–	1
Total,	. . . . .	3	3	4	4
Tuberculous meningitis,	Medfield,	–	–	–	1
Diphtheria,	North Brookfield,	–	–	–	1
	Randolph,	–	–	1	–
	Ware,	–	–	–	1
Total,	. . . . .	–	–	1	2
Measles,	Ware,	–	–	–	1
Cerebro-spinal meningitis.	Winchendon,	–	–	1	–
Anterior poliomyelitis,	Berkley,	–	–	–	1
	Concord,	–	–	–	1
Total,	. . . . .	–	–	–	2

REPORT ON INSPECTION OF FOOD AND DRUGS.

Laboratory Examinations of Food and Drugs.

The following summary presents the results of the laboratory examinations during the month of December, 1913, of samples of food and drugs collected by inspectors of the Board:—

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Butter,	6	–	6
Canned fruits and vegetables,	4	–	4
Canned meats and fish,	7	–	7
Cocoa,	2	–	2
Coffee,	3	1	4
Confectionery,	4	–	4
Cream,	55	–	55
Cream of tartar,	3	–	3
Drugs,	189	55	244
Flavoring extracts:—			
Lemon,	1	–	1
Raspberry,	1	–	1
Grape juice,	2	–	2
Grapefruit juice,	1	–	1
Honey,	8	–	8
Horse-radish,	2	–	2
Ice cream,	10	–	10
Jams and jellies,	14	1	15
Lard,	2	–	2
Malt liquor,	1	–	1
Maple sugar,	–	2	2
Maple syrup,	5	6	11
Meat products:—			
Hamburg steak,	10	4	14
Mince meat,	3	1	4
Sausages,	82	58	140
Scrapple,	1	–	1
Milk,	424	83	507
Olive oil,	6	2	8
Peanut oil,	1	–	1
Pickles,	7	1	8
Proprietary foods,	2	–	2
Salad dressing,	1	1	2
Soft drink,	1	–	1
Spices,	6	–	6
Sugar,	1	–	1
Syrup,	1	–	1
Table sauce,	2	–	2
Wine,	2	–	2
Total,	870	215	1,085

The samples of drugs found to be adulterated were spirit of nitrous ether, spirit of anise, spirit of peppermint, tincture of iodine, whiskey and mercurial ointment.

The cities and towns in which samples were collected were: Arlington, Attleborough, Bedford, Billerica, Boston, Brookline, Cambridge, Chelsea, Cheshire, Dracut, Everett, Lawrence, Lexington, Lowell, Lynn, Malden, Medford, Melrose, Newton, Pittsfield, Quincy, Reading, Revere, Rockland, Salem, Sherborn, Somerville, Springfield, Stoneham, Taunton, Wakefield, Waltham, Watertown, West Springfield, Woburn, Worcester.

Prosecutions for Violations of the Law relating to Food and Drugs.

Sixteen convictions were secured during the month of December, 1913, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	James Keaveny,	Cambridge,	Cider (preserved, not labeled).[1]
2	James J. McAndrews,	Cambridge,	Cider (preserved, not labeled).
3	Carl E. Lexander,	Cambridge,	Cider (benzoic acid).
4	Edward R. Connors,	Cambridge,	Cider (benzoic acid).
5	Harry E. Hill,	Cambridge,	Cider (benzoic acid).
6	Henry M. Fillmore,	Cambridge,	Cider (benzoic acid).
7	Caplan & Weiss,	Pittsfield,	Cider (benzoic acid).
8	Colman Specialty Company,	Boston,	Extract vanilla (15 per cent. vanilla containing vanillin solution).
9	Herbert L. King,	Pittsfield,	Hamburg steak (sulphurous acid).
10	Charles F. Benz (second offence).	Pittsfield,	Milk (total solids, 8.74).[2]
11	Leon H. Parker,	Chelmsford,	Milk (total solids, 11.32).[2]
12	Harold S. McIntire,	Stoneham,	Milk (total solids, 11.20).[2]
13	Oscar Talcofsky,	Cambridge,	Sausage (cereal starch).
14	Harry E. Hill,	Cambridge,	Sausage (cereal starch).
15	Magnus R. Jankelson,	Roxbury,	Spirit of peppermint (5 per cent. oil).
16	Walker-Rintels Company,	Boston,	Spirit of peppermint (72 per cent. oil).

[1] Appealed. [2] Watered.

Fines imposed, $455.

LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR DECEMBER, 1913.

The following shows the adulterated or improperly labeled foods, etc., during the month of December, 1913: —

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
23039	Victory Brand Cherries,	Standard Grocery Company, Boston, Mass.,	Preserved with a compound of sulphurous acid.
q 12359	Richmond Blend Coffee compounded with chicory.	Standard Grocery Company, Boston, Mass.,	Per cent. of ingredients not stated on label.
6392–R	"Our Finest" Maple Syrup.	Vermont Farmers Company, Springfield, Mass.,	Contained 90 per cent. maple, 10 per cent. cane, syrup.
6394–R	"Our Finest" Maple Syrup.	Vermont Farmers Company, Springfield, Mass.,	Contained 90 per cent. maple, 10 per cent. cane, syrup.
6082–R	"Our Finest" Maple Syrup.	Vermont Farmers Company, Springfield, Mass.,	Contained 75 per cent. maple, 25 per cent. cane, syrup.
6420–R	Spirit of anise,	Jaynes Drug Company, Lawrence, Mass.,	80 per cent. of U. S. P. strength.
5135–S	Sweet spirit of nitrous ether.	Brunelle Pharmacy, Lowell, Mass.,	67 per cent. of U. S. P. strength.
5090–R	Sweet spirit of nitrous ether.	R. J. Lang & Co., Lowell, Mass.,	33 per cent. of U. S. P. strength.
4794–R	Sweet spirit of nitrous ether.	E. F. Leonard & Co., Springfield, Mass.,	53 per cent. of U. S. P. strength.
6184–R	Sweet spirit of nitrous ether.	Falls & Burkinshaw, Lowell, Mass.,	73 per cent. of U. S. P. strength.
6470–R	Sweet spirit of nitrous ether.	Herbert F. Browne, East Cambridge, Mass.,	65 per cent. of U. S. P. strength.
4793–S	Sweet spirit of nitrous ether.	Irwin R. Barker, Springfield, Mass.,	47 per cent. of U. S. P. strength.
6494–R	Sweet spirit of nitrous ether.	Lyons The Druggist, Malden, Mass.,	84 per cent. of U. S. P. strength.
5405–S	Sweet spirit of nitrous ether.	S. Maro Harriman, Lynn, Mass.,	87 per cent. of U. S. P. strength.

List of Adulterated or Improperly Labeled Foods, etc., for December, 1913 — *Concluded.*

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
6390–R	Sweet spirit of nitrous ether.	G. R. Witcher, Medford, Mass.,	78 per cent. of U. S. P. strength.
6628–R	Spirit of nitrous ether,	E. F. Leonard & Co., Springfield, Mass.,	37 per cent. of U. S. P. strength.
6632–R	Spirit of nitrous ether,	C. P. Thompson Company, Inc., Springfield, Mass.,	51 per cent. of U. S. P. strength.
q 12642	Milk,	Louis Gintel, Taunton, Mass.,	Total solids, 11.66 per cent.; fat, 3.70 per cent.; contained added water.
q 12643	Milk,	Louis Gintel, Taunton, Mass.,	Total solids, 11.24 per cent.; fat, 3.50 per cent.: contained added water.
22882	Milk,	John F. Casey, Worcester, Mass.,	Total solids, 11.00 per cent.; fat, 2.40 per cent.; skimmed milk.
22894	Milk,	J. Shrier, Worcester, Mass.,	Total solids, 12.28 per cent.; fat, 2.80 per cent.; skimmed milk.
6240–R	Milk,	Walter Horne, Cheshire, Mass.,	Total solids, 11.18 per cent.; fat, 3.60 per cent.; contained added water.
6242–R	Milk,	Walter Horne, Cheshire, Mass.,	Total solids, 11.10 per cent.; fat, 3.40 per cent.; contained added water.
6244–R	Milk,	Walter Horne, Cheshire, Mass.,	Total solids, 11.28 per cent.; fat, 3.40 per cent.; contained added water.
6246–R	Milk,	Walter Horne, Cheshire, Mass.,	Total solids, 12.06 per cent.; fat, 3.75 per cent.; contained added water.
6248–R	Milk,	Walter Horne, Cheshire, Mass.,	Total solids, 11.38 per cent.; fat, 3.45 per cent.; contained added water.
6250–R	Milk,	Walter Horne, Cheshire, Mass.,	Total solids, 10.78 per cent.; fat, 3.40 per cent.; contained added water.
6252–R	Milk,	Charles H. Horne, Cheshire, Mass.,	Total solids, 10.52 per cent.; fat, 3.35 per cent.; contained added water.
6320–R	Milk,	Richard Barry, Atlantic, Mass.,	Total solids, 10.60 per cent.; fat, 1.50 per cent.; skimmed milk.
6322–R	Milk,	James G. Welch, Norfolk Downs, Mass.,	Total solids, 11.50 per cent.; fat, 3.60 per cent.; contained added water.

6328–R	Milk,	Merline Bros., Norfolk Downs, Mass.,	Total solids, 11.70 per cent.; fat, 2.45 per cent.; skimmed milk.
6334–R	Milk,	Murray's Lunch Room, Norfolk Downs, Mass.,	Total solids, 11.20 per cent.; fat, 2.05 per cent.; skimmed milk.
6350–R	Milk,	Dodson Lunch, Medford, Mass.,	Total solids, 10.10 per cent.; fat, 1.10 per cent.; skimmed milk.
5327–S	Milk,	John H. Burke, Rockland, Mass.,	Total solids, 10.26 per cent.; fat, 2.95 per cent.; contained added water.
22980	Milk,	H. Dinosky, Waltham, Mass.,	Total solids, 12.22 per cent.; fat, 2.90 per cent.; skimmed milk.
5459–S	Milk,	Charles F. Benz, Pittsfield, Mass.,	Total solids, 8.74 per cent.; fat, 2.90 per cent.; contained added water.
5501–S			Total solids, 9.68 per cent.; fat, 3.15 per cent.; contained added water.
5465–S	Milk,	Israel Goodman, Pittsfield, Mass.,	Total solids, 11.80 per cent.; fat, 4 30 per cent.; contained added water.
q 12753	Milk,	D. W. Ahearn, Somerville, Mass.,	Total solids, 11.06 per cent.; fat, 2.10 per cent.; skimmed milk.
23052	Milk,	John C. Burke, Springfield, Mass.,	Total solids, 11.80 per cent.; fat, 2.60 per cent.; skimmed milk.
23054	Milk,	Somers Creamery, Springfield, Mass.,	Total solids, 11.88 per cent.; fat, 2.90 per cent.; skimmed milk.
5617–S	Milk,	John Connors, Cheshire, Mass.,	Total solids, 11.08 per cent.; fat, 3.90 per cent.; contained added water.
5619–S			Total solids, 10.64 per cent.; fat, 3.00 per cent.; contained added water.
q 12802	Milk,	Peter McNamara, Dracut, Mass.,	Total solids, 6.80 per cent.; fat, 1.90 per cent.; contained added water.

REPORT ON INSPECTION OF DAIRIES.

The system of inspection of dairies in use by this Board during the past few years having been found inadequate on account of the changed conditions at the milk-producing places throughout the State, it has been found advisable to adopt the score card system of inspection of dairies as approved by the United States government. This system went into effect Dec. 1, 1913, and is productive of much better results than those heretofore obtained. A report of the work accomplished under this system appears below: —

MASSACHUSETTS STATE BOARD OF HEALTH

Sanitary Inspection of Dairy Farms

Score Card

Name..

Town of..State of.......................................

Milk being delivered by ....

to..for shipment to.......................

Date of inspection................................time....................A. P. M.

Was milking or handling milk being carried on at time of inspection ....

Delivered at station...R. R.................time..............A. P. M.

What milk is shipped { Night of day of shipment / Morning of day of shipment / Night or day before shipment / Morning or day before shipment } Do you receive other milk at any time, if so from whom ....

No. of cows............... No. milking..................Amount produced..............................

Are udders free from disease..

Does stable need whitewashing...................... Is ventilation effective..............................

Are pigs kept in stable..........................or a source of offence.......... Is ice supply adequate.....

Is milk room satisfactorily located........Method of cooling milk...

Danger of contamination...

Source of water supply..

Is it likely to be contaminated, and how...

Are privy vaults protected against flies......... Are they so located as not to be a source of danger.....

Are there infectious diseases among milk handlers or their families...

Date and nature of last case..

Is horse manure used near cows..

Remarks...

Score Card — Approved by U. S. Government.

Equipment.	Score. Perfect.	Score. Allowed.
Cows.		
Health:		
Apparently in good health	1	....
If tested with tuberculin once a year and no tuberculosis is found, or if tested once in six months and all reacting animals removed	5	....
(If tested only once a year and reacting animals found and removed, 2.)		
Comfort:		
Bedding	1	....
Temperature of stable	1	....
Food	2	....
Water:		
Clean	1	....
Fresh	1	....
Light: 4 sq. ft. of glass per cow	4	....
(Three sq. ft., 3; 2 sq. ft., 2; 1 sq. ft., 1. Deduct for uneven distribution.)		
Ventilation: automatic system	3	....
(Adjustable windows, 1.)		
Cubic feet of space for cow: 500 to 1,000 feet	3	....
(Less than 500 feet, 2; less than 400 feet, 1; less than 300 feet, 0.)		
Stables.		
Location of stable:		
Well drained	1	....
Free from contaminating surroundings	1	....
Construction of stable:		
Tight, sound floor and proper gutter	2	....
Smooth, tight walls and ceiling	1	....
Proper stall, tie and manger	1	....
Utensils.		
Construction of utensils	1	....
Water for cleaning	1	....
(Clean, convenient and abundant.)		
Small-top milking pail	3	....
Facilities for hot water or steam	1	....
Milk cooler	1	....
Clean milking suits	1	....
Milk Room or Milk House.		
Location of milk room:		
Free from contaminating surroundings	1	....
Convenient	1	....
Construction of milk room:		
Floor, walls and ceiling	1	....
Light, ventilation, screens	1	....
Total	40	....

Method.	Score. Perfect.	Score. Allowed.
Cows and Stables.		
Cleanliness of cows	8	....
Cleanliness of stables:		
Floor	2	....
Walls	1	....
Ceiling and ledges	1	....
Mangers and partitions	1	....
Windows	1	....
Stable air	6	....
Barnyard clean and well drained	2	....
Removal of manure daily to field or proper pit	2	....
(To 50 feet from stable, 1.)		
Utensils and Milking.		
Care and cleanliness of utensils:		
Thoroughly cleansed	5	....
Inverted in pure air	3	....
Cleanliness of milking:		
Clean, dry hands	3	....
Udders washed and dried	6	....
(Udders cleaned with moist cloth, 4; cleaned with dry cloth at least 15 minutes before milking, 1.)		
Handling the Milk.		
Cleanliness of attendants	1	....
Milk removed immediately from stable	2	....
Cleanliness of milk room	3	....
Prompt cooling: cooled immediately after milking each cow	2	....
Efficient cooling: below 50° F	5	....
(51° to 55°, 4; 56° to 60°, 2.)		
Storage: below 50° F	3	....
(51° to 55°, 2; 56° to 60°, 1.)		
Transportation: iced	3	....
(For jacket or wet blanket allow 2; dry blanket or covered wagon, 1.)		
Read your score card carefully and improve where points are low.		
Total	60	....

INSPECTION MADE IN MY PRESENCE.

Date .... Hour ....

.... Producer.

Score for equipment .... + Score for methods .... = ... **Final Score.**

Note 1. — If any filthy condition is found, particularly dirty utensils, the total score shall be limited to 49.

Note 2. — If the water is exposed to dangerous contamination or there is evidence of the presence of a dangerous disease in animals or attendants, the score shall be 0.

Signed ....

During the month of December, 1913, 391 dairies were examined in the following places: —

Place.	Number examined.	Class AA.	Class A.	Class B.	Unclean Dairies.	Per Cent. Clean Dairies.
Amesbury,	18	–	–	17	1	94.44
Belmont,	8	–	3	5	–	100.00
Boxford,	12	–	1	10	1	91.67
Brockton,	47	–	14	19	14	70.21
Brookfield,	19	–	5	14	–	100.00
Georgetown,	20	–	2	8	10	50.00
Groveland,	13	–	3	7	3	76.92
Merrimac,	8	–	2	5	1	87.50
New Braintree,	51	–	3	44	4	92.16
Newbury,	40	–	2	28	10	75.00
North Brookfield,	29	–	8	20	1	96.55
Rowley,	19	–	–	–	19	–
Salisbury,	18	–	1	11	6	66.67
West Brookfield,	38	–	6	28	4	89.47
West Newbury,	51	–	–	39	12	76.47

Total number of dairies examined,	391
Total number of commendable dairies,	305
Total number of unclean dairies,	86
Percentage of dairies which passed inspection,	78.01

In addition to the above, 75 dairies were visited at which the sale of milk had been discontinued, 3 of which are making butter; also 56 dairies were reported as producing less than 20 quarts of milk a day.

Included in the total number of dairies visited were 131 which had recently started in the milk-producing business and were inspected for the first time.

The names of the owners of the dairies found to be worthy of commendation follow: —

Amesbury.

Class B.

	Per Cent.
Bartlett, Theodore,	63
Bean, Oscar W.,	63
Chase, Ward,	60½
Chesley, M. Berry,	74½
Collins, S. I.,	63
Little, J. P. (Estate),	70½
Morrell, Frank,	68
Morrill, J. Albert,	71
Page, Edward W.,	72
Roy, E. B.,	64½
Smith, C. F.,	68
Swett, George W.,	60
Tewksbury, A. F.,	61
True, Eben,	68
Watkins, James E.,	62½
Wilson, H. I.,	74
Yell, Peter,	64

Belmont.

Class A.

	Per Cent.
Kendall, G. Fred,	75
Shaughnessy, John,	81
Welch, Michael,	85

Class B.

	Per Cent.
Henry, John W.,	68
Kendall, Arthur E.,	72
Quigley, (Mrs.) Edward,	66
Ryan, Dennis,	66
White, Edward,	67

Boxford.

Class A.

	Per Cent.
Sawyer, R. H.,	77½

Class B.

	Per Cent.
Chandler, J. G.,	60
Downs, Thomas,	64
Hooper Brothers,	67
Kilham, Chester,	66
Kilham, Frank,	62
Parkhurst, John W.,	69
Perley, Charles,	65½
Perley, Henry,	66½
Twisden, J. T.,	69½
Watson, F. E.,	64

Brockton.

Class A.

	Per Cent.
Battles, N. O.,	79
Bergeron, D. J.,	78
"City Farm,"	82
Copeland, Ellis,	75
Emery, A. B.,	77
Field, D. W.,	79
Field, Fred F.,	85
Howard, Warren A. (Estate),	89
Packard, J. Q.,	82
Rankin Brothers,	82
Reynolds, D. G.,	75
Shapleigh, Charles,	72
Southworth, M. C.,	82
Swanson, Fred A.,	78

Class B.

	Per Cent.
Barnes, Timothy,	63
Bryant, J. E.,	66
Butler, A. W.,	72
Campbell, W. M.,	66
Fay, John,	66
Foster, George H.,	65
Fullerton, W. Elmer,	70
Green, C. F.,	60
Howard, J. C.,	61
Johnson, Charles E.,	74
Keith, E. E.,	64
Kingman, A. P. & E. H.,	74
Leonard, J. B.,	66
O'Flaherty, Michael,	60
Packard, A. L.,	71
Packard, Walter T.,	72
Walsh, M. H.,	71
Warren, Charles,	68
Zarkoffski, Andrew,	66

Brookfield.

Class A.

	Per Cent.		Per Cent.
Blanchard, (Mrs.) C. P. (Estate),	85	Pike, Edward T.,	76
Hunter, David N.,	75	"Town Farm,"	77
Mellen, Walter B.,	76		

Class B.

Bannister, H. S.,	68½	Ledoux, Arthur,	64½
Boulette, John,	67	Mitchell, A. W.,	63½
Gunn, Charles,	72	Norcross, Willard,	67
Harwood, N. C.,	67	Richardson, William A.,	66
Harwood, S. George,	72½	Shooshanian, M.,	63
Hazen, G. C.,	61½	Sweet, Charles A.,	70½
Kennedy, Daniel,	63½	Thompson, C. F.,	60

Georgetown.

Class A.

Hardy, Walter,	76	Pyne & Card,	76

Class B.

Gage, Roy R.,	64	Stone, George W.,	70
Guptill, H. E.,	68	Tenney, G. D. (Estate),	62
Johnson, Charles,	72	"Town Farm,"	72
MacDonald, John R.,	67	Wilde, Allen H.,	72

Groveland.

Class A.

Day, Randall B.,	80	Stickney, J. H. & F. W.,	75
Longfellow, Andrew,	80		

Class B.

Bejian, Harry,	61	Martineau, Philip,	71
Dewhurst, George,	60	Smith, Everett A.,	61
Hardy, C. C.,	62	Spofford, Walter H.,	69
Langley, Alfred S.,	66		

Merrimac.

Class A.

Hoyt, Charles E.,	75	Roberts, A. K.,	76

Class B.

Blaisdell, Lorenzo,	65	Sargent, J. K. & S B.,	69
Graham, G. W.,	61½	Walker, H. A.,	71
Ratcliffe, Thomas,	68½		

New Braintree.

Class A.

	Per Cent.		Per Cent.
Hall, Fred,	75	Pepper, Henry A.,	79
Howe, E. A.,	76		

Class B.

Barlow, F. C.,	72	Morse, Frank A..	71
Barnes, F. H.,	63	O'Brien, John (Estate),	71
Barr, James E.,	62	Ostiguy, Joseph,	64
Barr, J. Arthur,	62	Pedrie, John,	64
Bowen, John,	65	Phaneuf, Leo Paul,	63
Carroll, Joseph,	68	Phelps, William H.,	69
Caskey, J. W.,	67	Pollard, H. D.,	61
Crawford, L.,	73	Potter, F. W.,	72
Crevier, Henry,	63	Revane, J. W.,	67
Exley, Joseph,	72	Scoville, M. W.,	61
Frost, (Mrs.) M. E.,	74	Shedd, J. T., & Son,	63
Gray, W. J.,	74	Skowar, Joseph,	64
Hare, Frank H.,	70	Slein, Patrick,	67
Havens, Edwin L.,	70	Snow, G. F.,	71
Hibbard, Joseph,	64	Titus, J. H.,	63
Johnson, Charles O.,	67	Unxitis, Charles,	64
Loftus, Martin,	66	Webb, Irving,	65
Mahan, Catherine,	67	Webb, J. Thomas,	69
Mara, (Mrs.) Hanora,	73	Whitney, Bernard,	64
Mara, T. L.,	65	Whitney, Dennis (Estate),	63
Mason, William,	61	Wine, John,	69
McCarthy, Owen (Estate),	68	Zelesky, Felix,	66

Newbury.

Class A.

Evans, William R.,	80	Noyes, Richard T.,	82

Class B.

Brown, D. B.,	62	Little, Heber,	65
Brown, Justin A.,	67	Little, Silas,	67
Burke, F. L., & Son,	67	Little, Stuart L.,	71
Burns, Martin,	66	Little, Wallace,	61
Caldwell, (Mrs.) M. A.,	65	Little, William,	61
Harrison, C. Stanley,	68	Lunt, E. A.,	62
Illsley, Edwin,	66	Lunt, George W.,	69
Illsley, Fred,	69	Noyes, E. A.,	64
Illsley, Paul M.,	64	Noyes, Elbridge,	71
Jacques, Joseph B.,	64	Noyes, James A.,	64
Jacques, Richard,	62	Noyes, Justin,	61
Kent, Edward (Estate),	69	Perkins, Frank,	62
Knapp, Henry A.,	66	Plummer, Warren,	62
Little, E. F. & D. N.,	62	Rolfe, J. C.,	68

North Brookfield.

Class A.

	Per Cent.		Per Cent.
Barnes, W. N.,	76½	Forrest, (Mrs.) A. F.,	76
Bennett, (Mrs.) John,	76	Krusell, John A.,	76½
Connolly, Dennis I.,	75	Prouty, D. H.,	75½
Delargy, P. C.,	76½	Rice, Harry,	76

Class B.

Adams, Ernest B.,	67½	Crawford, M. L.,	74½
Adams, Leon H.,	72	Hurd, H. E. & J. B.,	64½
Banks, B. M.,	68	Jenks, George A.,	70
Banks, George E.,	65	Murphy, Thomas,	64½
Bishop, H. E.,	62	Parkman, George G.,	73½
Brosnihan, John,	69	Rock, Joseph,	72
Chabot, Aime,	70	Smith, Lincoln,	73½
Connolly, Cornelius,	70½	Wine, Frank,	71½
Converse, M. C.,	71	Woodis, A. L.,	73
Courville, Alexander,	68½	Zalatores, Felix,	62½

Salisbury.

Class A.

Larnard, John, ... 75

Class B.

Bartlett, A. W.,	66	Getchell, Nicholas T.,	62
Boswell, Austin E.,	64½	Pike, Charles J.,	62½
Brewster, Charles A.,	64½	Pike, George C.,	64½
Cole, Benjamin W.,	65	Pike, Wilbur,	65½
Dow, G. A.,	65	True, Prince Albert,	73
Fraser, William M.,	62		

West Brookfield.

Class A.

Cutler, A. W.,	77½	Smith, W. E. & F. G.,	77½
Fairbanks, Charles L.,	75	Smith, Windsor,	77½
Henshaw, David F.,	75	"Town Farm,"	75

Class B.

Aiken, B. P. (Estate),	71	Macuin, F. S.,	62½
Allen, George E.,	72½	McElroy, Thomas,	66
Allen, J. W.,	74½	McIntyre, W. H.,	67½
Beeman Brothers,	73	McRevey, Michael,	71½
Biatck, John,	60	Rawson, Charles A.,	64½
Bridges, Frank E.,	60½	Reed, S. H.,	72
Bruce, W. H.,	63	Richardson, C. D.,	73½
Clarke, J. W.,	62½	Richardson, M. A.,	66½
Davis, C. F.,	67	Sampson, Fred,	67
Davis, R. B.,	74	Samkoski, Frank,	67½
Gilbert, (Miss) Clara,	69½	Walls, Fred B.,	72½
Karrel, George,	65	Webb, John H.,	65
Kennedy, Timothy,	60½	Welch, P. P.,	72
Lavigne, Alfred,	67½	White, Fred,	73

West Newbury.

Class B.

	Per Cent.
Bailey, Frank,	60
Bailey, Lawrence,	67
Bartlett, Austin W.,	62
Brown, Robert S.,	72
Daly, Peter J.,	65
Dole, E. L.,	71
Emery, The Misses,	73
Evans, David H.,	62
Flook, George L., & Son,	68
Giddings, Samuel W.,	68
Goodrich, Granville,	66
Goodrich & Currier,	67
Gowen, Frank L ,	64
Hogan, Patrick,	61
Hudson, W. W.,	63
James, Marcellus,	60
MacIntosh, Russell C.,	64
McDonald, John W.,	73
Morrill, (Mrs.) J. H.,	66
Moseley, F. S.,	66
Noyes, George E.,	74
O'Connor, M. H.,	66
Ordway, Charles W.,	66
Ordway, Cyrus D.,	67
Pinkham, George B.,	61
Poore, Fred H.,	62
Poore, P. A.,	63
Poore, W. S.,	67
Rogers, Charles H. (Estate),	66
Rogers, G. C. (Estate),	63
Rogers, W. S.,	74
Ruth, J. C.,	65
Salkins, Edward,	60
Smith, Robert L.,	66
Smith, Thomas,	60
Stevens, W. H.,	63
Sullivan, Jeremiah,	64
Thurlow, George C.,	64
Titcomb, Silas M.,	64

Classification of Dairies.

AA = 90 to 100 per cent.
A = 75 to 90 per cent.
B = 60 to 75 per cent.
Below Class B (60 per cent.), unclean or dirty.

THE FERTILIZING VALUE OF SEWAGE AND SEWAGE SLUDGE. — A SANITARY AND ECONOMIC PROBLEM.

By H. W. Clark, Chemist to the Massachusetts State Board of Health.

From time to time attention is called by various people, scientific and otherwise, to the great value of the fertilizing materials in sewage and the waste of these materials by all modern methods of sanitation and sewage disposal. This waste occurs more especially among such communities as have modern systems of water supply, sewerage and household plumbing, and at the present time the most civilized nations are those in which the greatest waste of this manurial product of human life takes place. The increased health, comfort and cleanliness in our modern life, due to our public water supply and sewerage

systems, have, however, become such an integral part of our civilization that these systems will undoubtedly continue to prevail, and the fertilizing materials of sewage continue to be wasted, until some economical method of reclaiming them is devised. In other words, the prevention of this waste concerns essentially the value of these materials in a given volume of sewage when compared with the cost of extraction. Enough material of a fertilizing or other value must be extracted by any process to more than pay for the cost of the process if it is to be employed. This problem will be solved eventually, but the difficulties are great, and only slight progress has thus far been made in its solution.

In the days before the invention of the water-closet, and before the construction of sewers, such wastes were retained at each household in a more or less concentrated form and had, of course, a well-known value. At the present time this waste of each household is carried from it diluted with large volumes of water.

The fairly strong domestic sewage of the city of Lawrence, used during 1912 at the experiment station of the Massachusetts State Board of Health, contained the following amounts of materials with an agricultural value: —

	Parts per 100,000.
Nitrogen as free ammonia,	3.20
Kjeldahl nitrogen,	1.08
P_2O_5,	1.00
K_2O,	1.50

The total value of these materials in each 1,000 gallons of this sewage was approximately 6.1 cents divided as follows: —

Amount and Value of the Constituents in 1,000 Gallons of Regular Lawrence Sewage.

	Pounds.	Cents per Pound.	Value (Cents).
Nitrogen as free ammonia,	.27	16.0	4.3
Kjeldahl nitrogen,	.09	10.0	.9
P_2O_5,	.08	5.0	.4
K_2O,	.12	4.2	.5

Each thousand gallons contained also about one-quarter of a pound of fatty matters, worth, at 3 cents per pound, — its approximate value, — about 7.5 mills.

It will be seen by the above table that two-thirds and more of the valuable constituents are represented by the ammonia in solution. Upon a million-gallon basis we find that the total value of agricultural materials in this volume is about $61 and of the fatty matters, $7.

Average American sewage contains not much, if any, more than 2,400 pounds of suspended matter in each million gallons of water, and of these 2,400 pounds, only about 350 pounds have fertilizing or other value. European sewage is more concentrated owing to the smaller per capita water consumption, and hence the matter in suspension is greater per unit volume of sewage. Dunbar[1] gives the pounds of suspended matter in sewage from ten representative German and English cities, namely, Hamburg, Hanover, Cologne, Essen, Freiburg, Breslau, London, Manchester, Leeds and Birmingham, and his figures show that these matters vary from 2,800 to 7,500 pounds per million gallons, with an average for the sewage of the cities given of about 3,450 pounds per million gallons. In this sludge the fertilizing constituents are found in connection with a large mass of inert organic and mineral matter, and also with much fatty matter, the presence of which lessens the manurial value of the sludge.

In all modern methods of sewage disposal or purification the first part of the process is the removal, as far as possible, of these suspended solids by screens, sedimentation tanks, etc., for, after this removal, the further processes of filtration can be carried on more economically. When chemical precipitants are added to aid removal and sedimentation, the volume of suspended matters carried down, — that is, the volume of sludge produced, — is of course largely increased, due not only to the deposition of some of the chemicals themselves, but also to the coagulating effect of these chemicals, not only upon suspended matters but also, to some degree, upon the colloidal matters and substances in solution.

During the first half of the last century sewage disposal and purification became an important and pressing problem in England, owing to the density of its population, the smallness of its rivers and the rapid introduction of sewers. The sewage from cities and towns passed unpurified into the rivers and polluted them to such an extent that its withdrawal and treatment were demanded. The first disposal or purification methods used, and still widely employed in England, were sewage irrigation and sewage farming.

Numerous official reports issued during this period were unanimous in recommending these methods of sewage treatment, and in 1862 a committee of the House of Commons was appointed to so deal with

[1] Director, Hygienic Institute, Hamburg.

the question of utilizing town sewage as to reduce taxes and at the same time benefit agricultural interests. This committee after various investigations concluded that the manurial value of sewage varied greatly, but expressed a belief that a financial profit was possible where local circumstances were not especially unfavorable. Previous to this a Royal Commission was appointed in 1857 to deal with the same subject, and reported that only by sewage irrigation and farming could the pollution of rivers be prevented, and that in some cases a profit was yielded from this method of sewage disposal. For many years past, however, it has been widely acknowledged in England that the utilization of sewage upon land, or sewage farming, can show a profit only under the most favorable conditions. England has in operation hundreds of these farms at the present day, but English cities and towns are, one after the other, relinquishing this method of disposal and purification in favor of more modern methods of filtration; that is, it has been found in most cases that no profit can be expected from such farming and that the cost of sewage utilization in this way is greater under many conditions than when the sewage is treated from the viewpoint simply of purification rather than utilization.

The British Royal Commission, in its report for the year 1908, presents certain estimates in regard to the cost of sewage disposal upon land as compared with costs for disposal and purification by modern methods, such as sprinkling filters, contact beds, etc. The figures given by them appear to show that land treatment, that is, sewage farming, is less expensive than modern methods where suitable soil is available, but that modern methods are more economical than treatment on land not well adapted for sewage farming. McGowan, Houston and Kershaw, in their report to the Royal Commission, state: "We are of the opinion that sewage farms in general can never be expected to show a profit if interest on capital expenditure is included."

The commission states in the conclusions of this report that where land can be bought for $500 per acre, land treatment is probably, other things being equal, the cheapest method of purification. They present, also, the cost of sewage treated at eight farms reported upon, and the cost as given varies at these farms from $6 to about $77 per million gallons of sewage treated.

The largest and probably the best managed sewage farms in the world are those of Paris and Berlin. The Paris farms cover more than 15,000 acres, and those of Berlin in 1907 were 39,000 acres in area. At portions of the Paris farms the farmers use the sewage without any financial return to the city, and at others the rent of the land is much increased by irrigation. According to Calmette,[1] however,

[1] Director, Pasteur Institut at Lille.

the profits are small and the process as a whole a costly one. The total operating cost of the Berlin farms in 1906 was $700,000, and the receipts for that year $750,000, showing a profit when these two items are taken into consideration. The capital sum expended on the farms up to 1907, however, aggregated $12,000,000. The cost of operation in that year amounted to $16.40 per million gallons of sewage treated; the receipts to $17.60 per million gallons of sewage; while the interest on the invested capital at 3½ per cent. was $9.80 per million gallons treated, showing instead of a profit an actual cost of $8.60 per million gallons of sewage treated. In fact, the only regions where sewage farming can at present probably always be carried on at a profit are arid regions such as found in India and the western parts of the United States, and in such regions the profit is due really to the value that the sewage has as a liquid rather than to its value as a fertilizer; that is, in these regions irrigation is a necessary adjunct to crop raising. As illustrating this, the following agreement ("Engineering Record," Feb. 15, 1913) is of interest. When one considers this agreement carefully it is clearly seen that the Denver Irrigation and Fertilizer Company desires the liquid rather than the fertilizer ingredients in this sewage.

This agreement is as follows: —

An ordinance authorizing the mayor of Denver, Col., to contract with the Denver Irrigation and Fertilizer Cómpany for the city's sewage for $7,500 per year for twenty years, became effective on February 13. For each 50,000 increase in population above 200,000 an extra $2,500 is to be paid. The sewage is to be utilized for irrigation after passing a treatment plant outlined by a director of the company as follows: sludge from concrete settling tanks will be treated by chemicals to bring about precipitation and deodorization in tank 1 before the water is drained into tanks 2, 3 and 4. The sludge will be baked in kilns, phosphates, superphosphates and nitrates being added in accordance with the suggestion of the chemists. It will then be ground and sacked for market as fertilizer. After the purification process is complete the water will be utilized for irrigation.

Calmette, after a thorough study of the Paris farms, concludes that they will be ultimately abandoned, and Dunbar believes that at Berlin artificial filters will one day take the place of the vast sewage farms now in use.

Dr. Fowler, the well-known chemist of the great sewage disposal plant at Manchester, Eng., in a recent statement says that the sewage farm at Wolverhampton, Eng., is one of the best managed in England. This is of particular interest to the writer, as this farm

was visited by him in 1908, and the sewage from a city with a population of 102,000 people was at that time being cared for. The ordinary flow of sewage was about 3,000,000 gallons daily, and several times this volume during storms. The sewage was first treated with lime and then passed through settling tanks and to land. Four hundred and fifty acres of a farm of 600 acres were used for sewage disposal. The total expenditure upon this sewage plant, up to the end of March of that year, was $750,000. The cost of operation for the year ending March 31, 1908, above the profit from the farm, was $26,000; including interest and sinking fund the yearly cost was slightly more than twice this, or about $56,000. The average rate of filtration at the farm was about 8,000 gallons per acre daily; the working cost, $22 per million gallons, and the cost per million gallons, including interest and sinking fund, $49. The sludge from chemical precipitation was pressed into cakes and burned or used to fill in low lands in different portions of the farm. It was not used as a manure.

In all the modern processes of sewage treatment, as previously stated, efforts are made to retain by screens and tanks as much of the matters in suspension as possible, in order that filtration may be carried on at a higher rate; that is, more economically than would be possible without such sludge retention. In England, therefore, the sludge question has been most thoroughly studied over many years, and at the present time it has become almost entirely a question of sludge disposal and not of sludge utilization.

London precipitates its sewage at Crossness and Barking, and carries its sludge to sea in sludge boats, — a common practice in other cities with similar situations, such as Manchester, Salford, Dublin, Glasgow, etc. At most English sewage purification works sludge is disposed of in the most economical manner possible at each particular plant. In some places it is lagooned, as at Birmingham; at others, it is used to fill in low lands, or is buried in masses many feet deep, as at York, where the sod of a field is removed and then replaced over the sludge. It is shipped to and dumped into abandoned mines, etc., and at only a few places can it be sold as a fertilizer; at comparatively few is much of it taken away by farmers, even when given to them free of cost. At some purification plants the entire cost of transportation, to such farmers as will utilize it, is borne by the municipality producing the sludge. It is probably safe to say that not over 1 per cent. of the vast volume of sewage sludge produced in England is used as a fertilizer. The British Royal Commission on Sewage Disposal, after many years' work and study, concluded that while sludge undoubtedly has a fertilizing value, the amount of the fertilizing con-

stituents present is relatively very small compared with the gross mass of sludge, and consequently the value of the sludge as a fertilizer depends to a large extent upon the cost of carriage. Their experiments showed, also, that not only do these fertilizing constituents act much more slowly than those present in ordinary artificial fertilizers, but also that unit for unit the nitrogen and phosphoric acid present are of less value than in the ordinary fertilizers, as they are less available for plant food. Moreover, there is danger, as they state, of clogging the soil if too large an amount of sludge is used. Results of certain farming experiments by the commission may be summarized as follows: —

Experiment No. 1. — Twenty pounds N and 18 pounds P_2O_5 per acre applied (1) in form of sewage sludge (2) as $(NH_4)_2SO_4$ and superphosphate. Crop (turnips) grown with the sludge was 9 hundredweight per acre *less* than on *unmanured* land. $(NH_4)_2SO_4$ and superphosphate gave increase of 4½ tons per acre. Experiment showed that the nitrogen and phosphoric acid in sludge are in a much less available form than the same substances in $(NH_4)_2SO_4$ and superphosphate.

Experiment No. 2. — Sludge applied at a rate of 40 pounds N per acre. Artificial fertilizers applied at rates giving equal amounts of N, Ca and H_3PO_4 as in the sludge. Experiments done in triplicate with wheat and corn.

The sludges which were driest (3.5 to 8 per cent. moisture) and contained the least Ca (3.8 to 9.5 per cent.) gave the poorest results, while those with the most moisture (27 to 35 per cent.) and Ca (25 to 27 per cent.) gave the best results.

This may be due to the fact that (1) too much drying renders the nitrogen less assimilable; (2) lime may be necessary to decompose the organic matter and make it available, and it is evident that the value of sludge does not depend entirely upon the N present.

The sludges had no effect upon the number of ears or their size. In the case of the straw, however, the sludge produced a longer straw than the artificial manure, but the weight produced by the sludge was only from 10 to 20 per cent. greater than that produced on the untreated soil, while the artificial fertilizers with equivalent amounts of N, etc., produced from 40 to 50 per cent. increase.

It would not pay farmers, the commission state, to give more than $2.40 per ton for the best of these sludges.

These experiments were duplicated in a following year and the same conclusions arrived at.

Experiment No. 3. — Sludges of different composition used upon grass land in such quantity that the N was approximately the same

but the amounts of lime and phosphoric acid varied. The season cold and dry, hence results not really fair, but the sludges gave less yield than untreated soil. Sulphate of ammonia and superphosphate increased the yield from 40 to 60 per cent. over untreated land. The year following, the crops on the same pieces of land, all untreated, gave much poorer results than in the preceding year, this showing that the sludges had no more effect the second year than the first. The total yield by the use of sludge for the two years was from 5 to 20 per cent. *less* than the yield on *untreated* soil. The $(NH_4)_2SO_4$ and superphosphate gave yields from 6 to 20 per cent. greater. The sludges with the highest N content gave the lowest results, while sludges with much lower N and higher lime gave much higher yields, "showing that the presence of Ca tends to react with the N present and make it more available."

There are in England, however, several municipalities, with an unusually rich sewage, which are able to sell this sludge or a part of it, and a few which add lime or other valuable constituents to the sludge in order that it may be sold. Glasgow, for example, has three sewage disposal plants. From two of them the sludge is shipped to sea in sludge boats. At one, — a chemical precipitation plant, — where the precipitants used are lime and ferrous sulphate, the sludge is pressed and dried, passed through a pan mill, so called, and sold under the name of "Globe Fertilizer." It is said to bring from $1.95 to $2.40 per ton in bulk, or $3.40 per ton in bags. The analysis of this fertilizer as given by the Royal Commission is as follows: —

Composition of Globe Fertilizer.

	Per Cent.
Moisture (at about 110° C.),	22.51
Matter volatile on heating,	33.98
Non-volatile matter,	43.51
	100.00

Analysis of Non-volatile Matter.

	Per Cent. in Fertilizer.
Grit, etc. (*i.e.*, matter insoluble in hydrochloric acid, after ignition),	10.75
Oxides of iron and alumina,	13.42
Lime,	12.09
Potash (soluble in hydrochloric acid) (approximate),	.10
Phosphoric acid (P_2O_5),	1.11
Equivalent to tribasic phosphate of lime,	2.42
Yield of nitrogen (total),	1.30
Nitrogen evolved on boiling the sludge for two hours with dilute (0.5 per cent.) potash solution,	.06

Bradford, Eng., has a sewage into which enters the waste from many woolen factories, and for many years this sewage has been treated with acid, the concentrated sludge pressed and the sludge cake — or as much as possible of it — sold. At the works at Esholt the press house is 237 by 92 feet and contains 128 sludge presses; the grease house, 237 by 50 feet, contains 16 grease vats, each capable of purifying 6 tons of grease. There is a grease storage tank with a capacity of 1,000 tons; also grease separators, sludge boiling vats, etc. The sludge on arriving at the receiving tanks is lifted to the boiling-up vats, so called, by means of compressed air, heated there by live steam and passed into three steel vessels placed underneath and from which it is forced by compressed air to the sludge filter presses. Each press contains 47 chambers, 3 feet square, and the grease and water from these presses are separated in tanks from which the water is pumped again into the sewer and the grease into the purification vats. In 1912 the one hundred filter presses in operation were stated to produce from 12 to 15 tons of grease per twenty-four hours, and this material is valued at from $40 to $50 per ton. The sludge from the pressing is stated to be more valuable than that usually produced, as it "contains no lime" and only 30 per cent. of moisture. It is stated, also, that it is sold at 3 shillings per ton at the works, but whether all is sold or not is not clear, and the statement that it is more valuable because it contains no lime is contrary to most statements in English literature on this subject, as it is generally considered that the addition of lime to a sludge gives it greater value, putting, as it does, the nitrogen into a more available form for plant assimilation. I have no recent figures in regard to the value of grease produced, but in 1904 the plant gave a revenue from grease sold of $29,300 at a cost of $59,500 for sulphuric acid used. When visiting the works in 1908 — or rather the Frizinghall works, as those at Esholt were not then constructed — I was informed that the sale of grease and sludge cake produced a revenue that about paid for their separation and extraction. In 1912 about 100 tons of sludge cake were being produced each day, and if sold for 75 cents per ton it would bring a daily gross revenue of $75. These works are not constructed and operated with the expectation of financial profit, however, but to keep grease, sludge, etc., from entering the river.

At Oldham, Eng., grease is obtained from sludge by distillation with superheated steam, and the sludge from the plant is dried in a cylindrical drier.

The ordinary sludge from the tanks is filter-pressed to about 60 per cent. moisture, and is then placed in the hopper of the drier. This drier is cylindrical

in shape, and the sludge is conveyed through it by means of a specially designed worm worked by gearing from the main shafting of the works, and drops through a valve, designed to keep out cold air, into a metal receptacle. From here the dry sludge is lifted to the hopper of the grease still and a small quantity of crude sulphuric acid added. The sludge is forced into the retort by means of a screw, and is conveyed through it by radial rotating arms fixed to a central shaft. These arms, which are a feature of a patent by Dr. Grossman of Manchester, are hollow and the ends perforated. Through them steam superheated about 40° F. is forced, and as the arms revolve the steam is thoroughly mixed with the sludge, carrying with it as it passes off the grease from the sludge. The retort is heated by the flue gases from the steam-raising plant. The grease-laden steam is condensed in a water tower and collected in tubs, and the grease after being boiled down and purified is ready for dispatch to the oil refiner. The residue from the retort varies considerably in its chemical composition, but is brownish in color, of the consistency of fine flour and quite odorless. It contains considerable quantities of nitrogen, potash and phosphates, and, mixed with basic slag, nitrate of soda or kainite, makes a very excellent manure. Each ton of pressed sludge from the Oldham works is found to yield about 140 pounds of grease and 750 pounds of manure.[1]

The plant owned by the municipality is operated by an individual who pays at the present time $5,000 per year for the privilege of operating the plant and having its product, and, as will be noted, the sludge is enriched by the addition of phosphates, slag, and kainite or crude potash.

At the Lawrence Experiment Station an investigation has been made in regard to the increased amount of fats and nitrogen obtainable by acidification of the Lawrence sewage. Summarizing ten experiments of this kind it was proved that by sedimentation of Lawrence sewage for four hours, 1,486 pounds of dry sludge, containing 49 pounds of nitrogen and 357 pounds of fatty matters, could be obtained from each million gallons of this sewage. When duplicate volumes of sewage were acidified with sulphuric acid, 60° B., at the rate of 2,685 pounds of acid per million gallons of sewage, the total dry solids obtained by four hours' sedimentation were 2,171 pounds per million gallons, containing 87.8 pounds of nitrogen and 467 pounds of fatty matters. This showed an increase of 38.5 pounds of nitrogen and 110 pounds of fat over the amounts obtained by sedimentation without acidification; in other words, we obtained by the use of acid to the value of $25 additional, nitrogen and fats worth about $7.25.

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[1] "Engineering Record," Vol. 62, No. 14, Oct. 1, 1910, p. 383.

Average Pounds of Suspended Matter per Million Gallons settling from Untreated and from Acidified Regular Sewage in from Three to Four Hours.

Total Solids.		Loss on Ignition.		Fats.		Kjeldahl Nitrogen.		Pounds[1] 60° B. Acid used.	Excess Acidity Equivalent to Parts $CaCO_2$.
Untreated.	Acidified.	Untreated.	Acidified.	Untreated.	Acidified.	Untreated.	Acidified.		
1,486	2,171	1,068	1,754	357	467	49.3	87.8	2,685	2.8

[1] 60° B. acid = 78 per cent. H_2SO_4.

Average Percentage Composition of Sewage Solids in Table Above.

Kjeldahl Nitrogen (Per Cent.).		Fats (Per Cent.).		Loss on Ignition (Per Cent.).	
Untreated.	Acidified.	Untreated.	Acidified.	Untreated.	Acidified.
3.27	4.05	26.2	23.0	73.0	82.4

While these figures represent actual values of fatty and nitrogenous materials in the sludge, it must be borne in mind that the fatty matters must be separated from the remainder of the sludge if either portion is to be of material value, and that this separation can only be accomplished by a great additional expense.

As showing general views from widely differing sources in regard to the fertilizing value of sludge, the following statements are taken from the book on "Sewage Sludge" by Elsner, Spillner and Allen: —

Page 3. The farmers (English) did not make use of this sludge as had been expected. This was partly because they discovered that its value had been over-estimated.

Page 5. As its by-product is of small value and of considerable mass, there should be an effort to avoid its transportation and treatment, especially by manual labor which increases the cost to an unnecessary extent. What an enormous expense may result is seen in London where about $238,000 is annually spent in carrying the sludge to sea in tank steamers.

Page 82. The hope of securing a revenue from sludge utilization equal to the cost of operation, or making it a profitable undertaking, has long been destroyed, at least with city sewage. This is easily understood when one considers that in a city with an output of 2,000,000 gallons of sewage per day only, perhaps 58½ cubic yards of sludge, with 90 per cent. moisture or 5.9 cubic yards of dried material, are recovered, of which possibly 2.6 to 3.1 cubic yards are of organic origin.

Page 84. The fertilizing material in sludge cannot be wholly utilized as is the case with sewage irrigation, for the proportion available as a plant food yields an excess of nitrogen. With grain this results in an abundance of straw but few shriveled grains. If, then, nitrogen is to be entirely utilized, either one must not apply too much sludge, unless vegetables only or leafy plants are to be raised, or else the lime and potash which are lacking must be brought to the field independently. For these reasons the actual value is much less than the theoretical. Moreover, artificial fertilizers are now much cheaper than formerly, and are preferred because more easily handled.

Page 91. At Frankfort-on-the-Main sludge dried in the air was transported as far as five miles; in Neustadt, even 6.85 miles by wagon, and in the latter case 62 cents per cubic yard was paid when no lime had been added, or 44 cents with lime. Conditions are seldom so favorable, however. In most cases a very small price is paid for dried sludge which is quite out of proportion to the cost of drying. In Leipzig, in 1908, the gross revenue (from the sale of sludge) was $318.68, while the cost in wages for removing the dried sludge from the pits was about $6,854.

Page 108. Extracting grease from sewage sludge under normal conditions can never be profitable. The situation is different in towns where much grease is discharged into the sewage from factories; as, for example, in various English cities from wool-washing works.

Page 123. The city of Edinburg in 1892 sent out 1,521 circulars to farmers in the neighborhood asking for proposals to take 58,100 tons of sludge. Only 47 bids were received, and all with the condition that the city pay for transportation, some even demanding a bonus for each ton removed.

Page 125. One of the principal difficulties in the use of sludge for farming purposes is the fact that fertilizers are usually used only during the winter months. As soon as it became possible to produce from the sludge a firm fertilizer, the feasibility of its transportation was increased. The city of Frankfort-on-the-Main has made experiments in this direction and manufactured "poudrette," in order to ascertain the cost of the process. Drying was necessary for this also. It was found, however, that even when it could be sold at market prices, the excess in cost of manufacture amounted to $71,400 per annum. . . . The experiment at Cassel is well known. At a cost of $47,600 a reduction plant was built where grease was recovered by the use of benzine after most of the water had been removed by filter presses, and the residue was used as a fertilizer. In spite of this (the price received for grease and fertilizer) the expenses were greater than the receipts, and the plant was abandoned and taken down.

At Worcester, Mass., where a chemical precipitation plant has been in use for many years, and which treats at the present time about 18,000,000 gallons of sewage daily, the cost of pumping the sludge out of settling basins, out of concentrating reservoirs and then pumping it to the filter presses and pressing and hauling it to the dump is

about $5.50 per million gallons of sewage treated. According to the report of the superintendent of sewers of Worcester for 1911, the amount of dried sludge per million gallons of sewage is from 1 to 1½ tons, and 10 per cent. of this dried residue is fat. The city has never been able to sell any of this sludge, as the supply has always greatly exceeded the demand. At certain times considerable amounts have been removed by farmers, but the amounts removed in this way are generally only a small percentage of the total amount produced. It is stated that in 1909, an exceptional year, about 30 per cent. was removed in this way. This pressed sludge from chemical precipitation contains about 60 to 70 per cent. of water.

At none of the thirty odd sewage-disposal plants in Massachusetts has any sludge been sold except at Brockton, where formerly a small amount was raked from time to time from the surface of the sludge beds. At many of these towns a certain percentage of the sludge is hauled away by farmers, however, without cost to the town, and in one or two instances small sums are paid the town per load delivered.

Ruggles (see "Engineering Record," Jan. 21, 1911) gives considerable data in regard to sludge disposal, and among other items a quotation from the report of the sewerage engineer of the city of Leeds, Eng. This report shows that in 1910 the cost of sludge pressing was $14,784; the cost of sludge disposal, $11,049; and only $981 were received from the sale of sludge. The money received was apparently from the sale of about one-third of the sludge cake produced, and the price paid was 6.4 cents per ton. Analyses of sludge given in this article by Ruggles, and estimates by him from these analyses, would seem to show theoretical sludge values of from $6.76 to $10.79 per ton, and he makes the statement that there should be no trouble in finding a ready sale in this country for such material in unlimited quantities at from $3 to $4 per ton. All English, German and American experience is, however, directly opposed to this optimistic statement of belief, even with sludge dried and placed upon the market in as good a condition as that intimated in this article. The theoretical value of sludge is altogether greater than its actual value.

Kinnicutt, Winslow and Pratt state that the average sludge at Worcester, Mass., from chemical precipitation, contains 2.77 per cent. of nitrogen; from plain sedimentation, 3.05 per cent.; and the sludge from the septic tank, 3.01 per cent. Ruggles estimates that if this nitrogen is all available it would mean an equivalent of ammonia of 3.36 per cent., 3.7 per cent. and 3.65 per cent., respectively, which, at $2.50 per unit, would give $8.40, $9.25 and $9.12 for the value of

each dry short ton of the material from these different methods of treatment. There is no demand for this sludge, however.

During the past year numerous analyses have been made to determine the percentage of nitrogen, potash, etc., and also available nitrogen in the Lawrence sludge, and the results show that the "available nitrogen" as determined by the official methods amounts to about 67 per cent. of the total nitrogen present.

Grossman ("Surveyor," March, 1912) states that the total amount of fertilizing constituents in each ton of English sewage has a value of about 6 cents, and that "with a liquid of such a complex nature as sewage, the recovery of these constituents by chemical methods would be a hopeless task." He also calls attention to the experiments on the value of sludge as a manure, made by the English Royal Commission on Sewage Disposal, already referred to in this article, and cites the slight value of such sludge and the evidence given by sewerage engineers before the Royal Commission as showing that they recognize the fact that crude sewage sludge is almost worthless as an agricultural commercial product. Grossman further states that one would suppose that the commission would have endeavored to find some reason why the crop results obtained by the use of sludge should not have been proportional to the amounts of nitrogen, potash and phosphate in this sludge, and calls attention to the fact already mentioned in this article, that all sludge contains a large amount of fatty matters, the presence of which greatly lessens its value for agricultural purposes. This fact has, of course, been recognized for many years, and it is evident that the removal of fat is a necessity before sludge can be used as a fertilizer. As Grossman states, fatty substances mixed with mineral and organic matter produce a kind of magma impervious to rain and air.

In an article by Naylor ("Surveyor," June 7, 1912) entitled, "The Struggle with Sewage Sludge," it is stated, after quoting analyses of commercial fertilizers, sewage sludge, etc., that "dried sludge, therefore, on the face of the previous observations, would appear to have a value of from 30 to 40 shillings per ton, and to be easily capable of enrichment by ammonium sulphate and ground bones so as to bring it within the region of the best artificial manures." But he adds that "it has recently been pointed out by Dr. E. J. Russell that a soil must be considered from three points of view: (1) its store of plant food, actual and potential; (2) its physical properties; and (3) the rate at which potential plant food can be converted into actual plant food. What one has to consider in dealing with the real value of a manure or fertilizer in a soil is its ease of decomposition. In spite of

alluring advertisements and tempting analyses farmers do not take even ordinary dried sewage sludge away as voraciously as one would expect, and they know the reason why; or, in other words, the results of its use are not encouraging because the manurial constituents are not easily assimilated by the soil." The cause of this is the presence of grease, and this cause, says Naylor, must be removed before sewage sludge will be accepted as a manure worthy of the consideration of the agriculturist. "To make the sludge available for farming purposes it must be deprived of its grease."

In the article quoted, three methods of removing grease are mentioned: (1) solvent degreasing; (2) distillation by means of superheated steam; (3) dry distillation. The first two are well known and have been investigated in this connection for many years, and the first has only within recent years become a commercial success when applied to the wastes from wool-scouring containing perhaps one hundred to two hundred times as much fatty matter as is present in sewage sludge. The solvents used are both expensive and dangerous; the apparatus is also expensive, and every leakage must be guarded against. Extraction of fat by these solvents is easy, but the difficulty is to recover the solvent, and its loss is fatal to the economy and success of the process. It is improbable that an economical method of treating sewage sludge based upon the use of solvents for the removal of grease will be perfected for many years.

Grossman's recovery plant, according to Naylor, is based on the second process and the fact that "fats may be distilled by means of superheated steam at a lower temperature than that at which they will volatilize in the absence of steam." The dry distillation method, so called, is theoretically a process for carrying grease by means of hot gases aided by steam generated from the wet sludge undergoing treatment, and with the distillation carried on at a temperature sufficiently high to drive off the fats but not to char or carbonize the organic matter or decompose the nitrogenous compounds.

This is an attempt to apply to the treatment of sludge an apparatus used in Canada for the treatment of peat to remove water, and thus increase the fuel value of a given amount of peat and also to so change it physically as to render it more easily pressed and handled. In this process the sludge or peat is fed into a cylinder or pipe within which revolves a spiral which forces the sludge forward. The peat or sludge is treated under pressure at a temperature of 200° C. or higher. Naylor states that sludge containing 90 per cent. water and 10 per cent. fats was treated by this process and its physical character so altered that it was much more easily pressed. As yet this treatment

must be considered simply as an aid in handling the sludge, and must be followed by pressing and further distillation of grease to render the sludge of agricultural value.

Judging from Naylor's article, the "wet carbonizing" of sludge followed by grease removal is being carried on at Norwich, Eng., at the present time, and he states that "economies and improvements will bring delivery of powdered, dried, sterilized, fat-free sewage sludge, a part of a sewage works manager's duty," and, further, "The Norwich Natural Manure Company starts now as the pioneer. It has acquired from the Elector-Metals Company, Limited, the exclusive right to use the process of wet carbonizing in the treatment of sludge, subject to a royalty not exceeding 4 shillings per dry ton." The company is granted a free site by the corporation, and will receive from it a payment of $3,000 per annum during a period of fifteen years for treating sludge up to a quantity not exceeding 1,000 tons per week wet or 100 tons per week dry. A prospectus states that "a responsible firm has offered to take all of the output at a price of 45 shillings per ton, but that a better price should be obtained in consideration of its high manurial value." It is implied by Naylor in this article that grease is removed from the sludge, after the wet carbonizing process, by distillation with superheated steam. This is not clearly stated by him, however, and it is noticeable that the treatment is carried on at a cost to the municipality.

Mr. John D. Watson, engineer to the Birmingham, Tame and Rae District Drainage Board, Eng.,[1] states that he has examined plants for the recovery of the valuable bodies in sludge in England, Scotland, Germany and Belgium, but without being satisfied with their results. He mentions, with some degree of approval, the process now being worked at the Dublin, Ire., sewage outfall. In this process "brewery yeast" is introduced into the sludge to permit rapid fermentation and the separation of water. After the mixture of sludge and yeast, the sludge is pumped to a heater which consists of a number of pipes warmed by hot air, and is then delivered to fermenting troughs, each 50 feet long by 4 feet wide, holding about 3,000 gallons. Under each trough is a hot-air duct, and the sludge is kept at a temperature of about 90° F. After treatment for twenty-four hours in this way, it is found that, as a result of the fermentation, there is a distinct separation of water, this water being drawn off from below. On account of this separation, the sludge is reduced to about one-fourth its original volume. It is then mixed with an equal weight of a "compound of phosphates and potash and dried." According

[1] "Surveyor," Jan. 9, 1914.

to Mr. Watson the drier "consists essentially of a cylindrical, vertical casing containing a series of arms and platforms revolving upon a center shaft, and between fixed arms and platforms. The platforms have large perforations in the shape of sectors of a circle, and the mixture, which is fed in at the top, is scraped over the surface of the plates and gradually falls through the drier to the outlet at the bottom. Air at a temperature of about 450° F. is blown in at the bottom and passes out at the top of the machine. The dried product then falls into a disintegrator, consisting of a revolving paddle, which beats up the product into a powder, which is blown out at one end of the machine by a draft of hot air."

Conclusions.

In conclusion, then, it is evident (1) that the total amount of fertilizing and fatty matters in each 1,000 gallons of representative American sewage is not worth above 6 or 8 cents. Of this, about half is represented by the ammonia in solution, and there is no method by which this material can be utilized except by application of the sewage to land. All experience, covering many years with hundreds of well-operated sewage farms ranging in size from a few acres to the vast 39,000-acre farm at Berlin, Ger., has shown that only under the most favorable conditions can the return from these farms be made to pay operating expenses, and an instance is yet to be cited where these returns pay both the cost of operation and interest on the capital invested. The exceptions, perhaps, to this are certain tracts or farms in regions of low rainfall and where the sewage is valuable as a liquid, that is, for real irrigating purposes. The Wolverhampton farm quoted in this report is undoubtedly a representative English farm as regards good management and cost of operation, and at this farm the actual total cost of sewage treatment is $49 per million gallons. (2) Much of the valuable fertilizing and fatty constituents in sewage is found in the matters in suspension. Average American sewage contains, perhaps, about 2,400 pounds of sedimentable matter in a million gallons, and the nitrogen, fatty matters, etc., in this 2,400 pounds of sludge are worth, approximately, $15 or $18. In order, however, to reclaim this valuable material, the sludge must be dried, pressed and also subjected to a process for the separation of grease from the fertilizing constituents in the remaining body of the sludge. Only by this separation can the grease become an article of commerce and the sludge of real agricultural value. This fact is well established by long experience and many investigations. When the fatty matters are separated by any known process, this procedure is costly. Only in a

few places as yet is such separation attempted as a commercial enterprise, and the profitableness of the works at these places is as yet doubtful. When the sludge is freed, or practically freed, from fatty matters it consists of a large weight of inert mineral and organic matter mixed with a comparatively small weight of fertilizing matter, hence the cost of carriage is great even when it is well dried. It has also been well proved that the nitrogen, phosphoric acid, etc., present are generally in a less assimilable form than the same bodies in ordinary commercial fertilizers. The sludge has value, however, and as the processes of drying, pressing and fat separation are improved, and also as nitrogen advances in price, as seems inevitable, sewage sludge will become of greater agricultural value than it is at present, especially as the basis of a fertilizer enriched by the addition of potash, phosphates, etc.

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